SCIENTIFIC, PROFESSIONAL, AND ADMINISTRATIVE POSITIONS TO PROMOTE THE NATIONAL DEFENSE

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HEARINGS

BEFORE THE

COMMITTEE ON POST OFFICE AND CIVIL SERVICE HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

SECOND SESSION

ON

H. R. 9350 and H. R. 9405

BILLS TO CREATE ADDITIONAL SCIENTIFIC, PROFESSIONAL, AND ADMINISTRATIVE POSITIONS TO PROMOTE THE NATIONAL DEFENSE

FEBRUARY 21 AND 23, 1956

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CONTENTS

Statement of— Page

Dryden, Dr. Hugh L., director, National Advisory Committee for Aeronautics 35

Dembling, Paul G., legal adviser, National Advisory Committee for Aeronautics 35

DuFlon, Henry A., Deputy Assistant Secretary of Defense (Manpower, Personnel and Reserve) 3

Lacklen, Robert J., personnel officer, National Advisory Committee for Aeronautics 35

Macy, John W., Jr., executive director, United States Civil Service Commission 63

Moore, Hon. George M., Commissioner, United States Civil Service Commission 63

Robertson, Hon. Reuben B., Jr., Deputy Secretary of Defense 3

Victory, Dr. John F., executive secretary, National Advisory Committee for Aeronautics 35

Wheeless, Leon L., Director of Civilian Personnel Policy Division (Manpower, Personnel and Reserve), Department of Defense 3

SCIENTIFIC, PROFESSIONAL, AND ADMINISTRATIVE POSITIONS TO PROMOTE THE NATIONAL DEFENSE

TUESDAY, FEBRUARY 21, 1956

HOUSE OF REPRESENTATIVES,
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,
Washington, D. C.

The committee met at 10 a. m., in the committee room of the House Committee on Post Office and Civil Service, room 213, House Office Building, Hon. Tom Murray (chairman) presiding.

(H. R. 9350 and H. R. 9405 are as follows:)

[H. R. 9350, 84th Cong., 2d sess.]

A BILL To promote the interests of national defense through the advancement of the scientific and professional research and development program of the Department of Defense, to improve the management and administration of the activities of such department, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) subsection (a) of the first section of the Act of August 1, 1947 (61 Stat. 715; Public Law 313, Eightieth Congress), as amended, is amended to read as follows:

"(a) The Secretary of Defense is authorized to establish and fix the compensation for not more than 275 positions in the Department of Defense and for not more than 35 positions in the National Security Agency, each such position being established to effectuate those research and development functions, relating to the national defense, military and naval medicine, and any and all other activities of the Department of Defense and the National Security Agency, as the case may be, which require the services of specially qualified scientific or professional personnel."

(b) Nothing contained in the amendment made to such Act of August 1, 1947, by subsection (a) of this section shall affect any position existing under authority of subsection (a) of the first section of such act as in effect immediately prior to the effective date of such amendment, the compensation attached thereto, or any incumbent thereof, until appropriate action is taken under authority of subsection (a) of such first section of such act as amended by this act.

SEC. 2. Section 505 of the Classification Act of 1949, as amended (69 Stat. 179; 5 U. S. C., sec. 1105), is amended——

(1) by striking out in subsection (b) of such section 505 "subsections (c), (d), and (e)" and inserting in lieu thereof "subsections (c), (d), (e), and (f)"; and

(2) by adding at the end of such section 505 the following new subsection:

"(f) The Secretary of Defense is authorized, in accordance with the standards and procedures of this act, to place a total of 285 positions in the Department of Defense in grades 16, 17, and 18, of the general schedule. Such positions shll be in addition to the number of positions authorized to be placed in such grades by subsection (b)."

[H. R. 9405, 84th Cong., 2d sess.]

A BILL To promote the interests of national defense through the advancement of the aeronautical research programs of the National Advisory Committee for Aeronautics

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That subsection (b) of the first section of the Act of August 1, 1947 (61 Stat. 715; Public Law 313, Eightieth Congress), as amended by the Act of July 13, 1949 (63 Stat. 410; Public Law 167, Eighty-first Congress), is amended to read as follows:

"(b) The Chairman of the National Advisory Committee for Aeronautics is authorized to establish and fix the compensation for, in the headquarters and research stations of the National Advisory Committee for Areonautics, not to exceed 60 positions in the professional and scientific services, each such position being established in order to enable the National Advisory Committee for Aeronautics to secure and retain the services of specially qualified personnel necessary in the discharge of the duty of the committee to supervise and direct the scientific study of the problems of flight with a view to their practical solution."

Mr. MURRAY. The committee will come to order.

Our committee is meeting this morning to consider 2 bills, H. R. 9350 and H. R. 9405. H. R. 9350 was introduced by me at the request of the Secretary of Defense; and H. R. 9405 has also been introduced by me at the request of the National Advisory Committee for Aeronautics. Both of these bills are directed at the critical shortage of scientific and professional personnel needed for the development of guided missiles and other complex weapons which are of utmost importance to our national security. It has been given top priority by the Secretary of Defense and by the director of the National Advisory Committee for Aeronautics, which has pioneered in the guided missile field.

The Secretary of Defense wrote me on January 23, 1956, that one of the most pressing operating problems of the military departments is inability to attract and retain competent scientific, technical, and top administrative personnel. He emphasized the danger in this personnel shortage if we are to stay ahead of our potential enemies in technological military fields and in producing weapons of the ever-increasing complexity now in use.

I assured the Secretary of Defense that I would be glad to bring the matter to the attention of the committee at the earliest opportunity. This was followed by a number of staff conferences, and I introduced the legislation upon receipt of the executive communications requesting it.

This committee reported the bill that became Public Law 313, 80th Congress, which first authorized 13 professional and scientific positions in each of the 3 military departments and 6 such positions in the Department of Defense, or a total of 45. We also reported the amendment which became Public Law 167, 81st Congress, creating 10 such positions in the National Advisory Committee for Aeronautics.

I for one want to do everything in my power to make our defenses stronger on account of the world situation, and am sure that the committee members are in agreement. This committee certainly does not want to relax our guard. We should continue, in our jurisdiction, to provide the best professional, technical, and administrative talent to carry out our national defense program and to insure that all of our resources are used to the best advantage.

I am sure all of us fully realize the crying need for trained scientific and professional personnel today. You can read the New York Times every Sunday and see page after page of advertisements for every kind of engineers and scientific and professional people of every type and description. There is a crying need for trained personnel in these categories.

This morning we are pleased to have Mr. Reuben B. Robertson, the Deputy Secretary of Defense, as the first witness to appear in behalf of H. R. 9350. We will be glad to hear from Mr. Robertson at this time.

STATEMENT OF HON. REUBEN B. ROBERTSON, JR., DEPUTY SECRETARY OF DEFENSE, ACCOMPANIED BY MR. HENRY A. DuFLON, DEPUTY ASSISTANT SECRETARY OF DEFENSE (MANPOWER, PERSONNEL AND RESERVE); AND MR. LEON L. WHEELESS, DIRECTOR OF CIVILIAN PERSONNEL POLICY DIVISION (MANPOWER, PERSONNEL AND RESERVE)

Mr. ROBERTSON. Mr. Chairman and members of the committee, it is a pleasure to be able to appear before you on this subject which we consider of such vital importance, and also to have a chance to visit with some of the Members of Congress whose work has such an important effect upon the Department of Defense.

I would like to take the opporutnity of reading a statement which will encompass our views for Defense as a whole, and elaborate on it as I go along, if I may.

Mr. MURRAY. Very well.

Mr. ROBERTSON. Since the large numbers of civilians in our Department play a most essential part in our defense programs, the conditions of employment and personnel policies established through this committee are of the greatest significance to us. The pay, overtime, recruitment at above minimum rates, life insurance, incentive awards, and other items of constructive legislation, which have been enacted as a result of your efforts, have had a very beneficial effect on personnel operations in our Department.

I greatly appreciate your consideration in providing me with this opportunity to outline to you another problem which we consider of major importance, and to obtain your assistance in developing an appropriate course of corrective action.

At present Defense has available to it an inadequate number of top level scientific and professional positions as well as administrative positions in the GS–16 to GS–18 range.

The efficiency with which the Department of Defense is managed; the progress of our most vital research programs; and the effectiveness of programs for developing competent civilian career managers; are all adversely affected by lack of an adequate number of positions in the upper levels.

The problem is particularly acute in the research and development field where large increases in both the size and complexity of our programs have taken place, and where competition for qualified personnel is most severe.

Upon recommendation of this committee the Congress recognized in the act of August 1, 1947, the necessity for offering more adequate salaries to specially qualified scientists in the defense program, and for providing flexibility in selecting and setting rates of pay for these scientists.

This legislation provides authority for the Secretaries of the military departments and the Secretary of Defense to establish rates of pay for a total of 45 scientific and professional positions for which specially qualified persons are needed, and also grants authority to set the rates of pay for these positions in a range of from $10,000 to $15,000, subject to the approval of the Civil Service Commission. It also provides that persons may be selected to fill these positions without competitive examination, upon approval of the proposed appointee's qualifications by the Civil Service Commission.

time.

We are able to outline for you today the experience which we have had in the Department of Defense with this legislation during the more than 8 years it has been on the statute books.

This legislation has been particularly helpful to the Department not only because it made available some of the higher level positions required, but because it made it possible to establish rates of pay for specially qualified scientists which took into consideration the qualifications of the individual as well as the requirements of the job.

This flexibility is needed because job content cannot be rigidly prescribed for many top level positions involving research and development functions. In these positions the ability of the incumbent determines to a considerable extent the nature and content of the job.

I am glad to say to you that, since studying this problem, I have learned that there has never been a word of criticism as to the manner in which this flexible authority has been used in the Department. Nor have I heard anything but praise for the manner in which the Commission has cooperated in the administration of this law.

While this legislation has been valuable to the Department, the number of positions provided in it is far too small to meet our actual needs.

As our efforts to maintain technical superiority have intensified, research and development, and test activities have expanded 5 or 6 times what they were in 1947 when the present 45 positions were authorized.

The budget request for fiscal 1956 was $1.4 billion, and for fiscal 1957 was 1.6 billion. In addition, more than twice this amount is requested in other appropriations in support of the research and development and test programs.

In addition to increases in size, our research and development programs have grown more complex and the demands more urgent. Many of the items developed as a result of previous years of effort are now reaching a stage of critical test and evaluation.

Existing requirements for the development of missiles and test vehicles for the expanding guided missile programs, for new nuclear weapon applications, for many new types of combat and support aircraft, and for experimental ships of many classes have created a pressing need for the highest possible technical leadership in the Defense Department.

To retain the type of scientific talent that we need for these programs, and to attract new personnel as required, it is essential that we be able to adequately compensate scientific and professional personnel in these key jobs and to offer talented men careers with opportunities for advancement in the research and development programs of the Department of Defense.

We cannot satisfactorily do this with the present shortage of higher level positions.

This situation is especially serious because of the strenuous national competition for the services of qualified scientific and professional folks. Recruitment practices resulting from the current shortages of engineers and scientists are dramatically portrayed, not only as you point out, Mr. Chairman, in the New York Times every Sunday, but there is also an article in the New York Times of January 29 of this year which gives quite a story on the problem of recruitment.

Every type of recruiting device is being used by industrial corporations to attract scientific personnel at all levels. Advertising in news-

papers and professional journals is greater than ever before; teams of field recruiters from numerous companies travel the country and set up offices wherever there are concentrations of engineers; and hundreds of recruiters beseige the campuses of universities to attract new graduates. Columbia University, for example, is reported to have nearly as many companies scheduled to visit its campus this spring as it has graduates seeking positions.

Mr. MURRAY. Some of these companies give scholarships to young men to go to college with the understanding they will be their employees after they get their scientific degree?

Mr. ROBERTSON. Some of them do. I do not know if there are any strings attached, but there is always the hope they will come in the employ of the company that furnishes the scholarship. During three days of last week I visited three of the General Electric plants interested in both the guided missile program and nuclear propulsion. They pointed out they had to have enormous teams out and that to recruit each person they get costs them about $2,000. So while that particular effort is in the interest of defense, it illustrates the kind of problem we are up against in getting and holding our folks.

Mr. GROSS. Mr. Chairman, may I ask a question at this point?

Mr. MURRAY. Mr. Gross.

Mr. GROSS. Is there still featherbedding going on by corporations in the hiring of engineers?

Mr. ROBERTSON. I would say there is not room for featherbedding. For example, in the review of personnel of General Electric and others, including Bell Laboratories, it is found they are getting the most extensive use out of their scientific and professional personnel.

Mr. GROSS. Are you saying there is no featherbedding today? I think you know there has been in the past.

Mr. ROBERTSON. I could not go so far as to say there is no featherbedding on the whole.

Mr. GROSS. If the Department of Defense does not know that in the past there has been featherbedding of engineers by corporations, they had better get busy. I do not know if that is true today, but it certainly has been true in the past.

Mr. ROBERTSON. I am not able to answer as to the background, but in the companies engaged in the development of missiles and others I have visited recently, I have seen no sign of that.

Mr. GROSS. How long have you been with the Department of Defense?

Mr. ROBERTSON. Six months.

Mr. GROSS. That is all, Mr. Chairman.

Mr. MURRAY. You may proceed.

Mr. ROBERTSON. In the face of extremely attractive salary and other inducements being offered by private industry, many of our scientists are staying with Defense at considerable personal sacrifice because of their great interest in the projects in which they are engaged and their dedication to the defense effort. But they do want comparable recognition within the Department with their fellows who are doing comparable work. We can ill afford to ask any of them to accept less than comparable recognition because of the lack of a sufficient number of high-level scientific and professional positions to satisfy legitimate requirements. I would like to point out there, in the case of the group that are working on missiles at the Redstone Arsenal,

75485—56——2

there is a group of scientists that stayed with that job very loyally and steadily during the period of recent years, and actually virtually everyone of those fellows could have gotten jobs elsewhere at substantially higher rates. They have stayed together for the most part, but we urgently need to recognize their skills and talents. That is just one illustration of what I have seen close at hand.

Based upon a survey of requirements in our various research and development programs for positions of the type authorized in the act of 1947, we have determined that 275 such positions are currently needed in Defense. This figure includes 17 positions in the Office of the Secretary, 85 in the Army, 89 in the Navy, and 84 in the Air Force.

Those are all outlined here, and representatives of all the departments are prepared to show the nature of the jobs, and I am sure, from the screening and review that has been done by the three services and the group in the Office of the Secretary, that those are sound requirements with only a modest amount of latitude for new and unforeseen needs.

Mr. MURRAY. You are asking for an increase of 230 research and development positions? You have 45 now and you are asking for 275?

Mr. ROBERTSON. Yes.

These requirements are included in legislation which has been introduced by your chairman as H. R. 9350.

Also included in this legislation as introduced are 35 scientific and professional positions for the National Security Agency. A more thorough review of the requirements of that Agency supports a figure of 50 instead of 35. General Canine will discuss this matter more in detail, but I do want to urge favorable consideration for the request that the committee increase to 50 the number of scientific and professional positions authorized for the National Security Agency, one of our most vital agencies.

Mr. MURRAY. The bill only asks for an increase to 35 for the National Security Agency.

Mr. ROBERTSON. We are asking that that figure be changed from 35 to 50, which is the result of a more careful detailed analysis which Mr. DuFlon has made.

Mr. MURRAY. You asked for 35 and now you say you need 50?

Mr. DUFLON. Mr. Chairman, it is a matter of converting supergrades to 313's and requesting under the 313 total a greater number. The total requirements were 50 supergrades and fifty 313 positions. To the degree they get the fifty 313 positions they will need 15 less supergrades. This is merely a form in which we are putting them.

Mr. MURRAY. How many supergrades does the National Security Agency have?

Mr. DUFLON. 23 at present. They have a request for 8 pending at the Civil Service Commission. If they get the fifty 313 positions they will not have need for 15 of the supergrades that they were developing job classifications for. It is really a transfer from their supergrade request to 313's.

Mr. MURRAY. You may proceed.

Mr. ROBERTSON. To be certain that this committee has full information as to the requirements of Defense, we have prepared and made available to you lists of the positions, a brief description of the

work involved in each, and a compilation of the positions by scientific research and development program areas. A supplemental list of the positions required by the National Security Agency is also available.

In addition, we have with us here today those who are actually working directly with these matters in Defense. They are available to answer specific questions which you may have.

The requirements for scientific and professional positions may shift both within and among the military departments as emphasis is placed upon different areas of research. For that reason, to provide needed flexibility, the proposed legislation vests in the Secretary of Defense responsibility for all the positions in the Department, rather than allotting these positions by law among the different military departments, as now provided in the act of 1947. It would be our purpose to allot, and from time to time to reallot, positions to the military departments and the Office of the Secretary of Defense, as required by demonstrated needs.

In your review of the descriptions of the positions submitted for your consideration, you will note that they involve duties of broad scope. Men holding such positions as technical directors of air development centers, chief scientists of Signal Corps laboratories, where so much vital electronic work is done, and technical directors of naval ordnance laboratories must be of the highest caliber if we are to get the results we are seeking from our research and if the billions of dollars being spent on research and development activities are to be administered most effectively. To fail to recognize properly the importance of these positions could be the worst type of extravagance.

This committee has already recognized the inadequacy of the presently established salary range for these scientific and professional positions by recommending last year in H. R. 7619 an increase in this range. We concur most heartily in this action which you have taken.

I would like to turn now to the other phase, which is the grades 16, 17, and 18.

Mr. MURRAY. Before you get away from professional and scientific positions, at the present time there are 13 of these positions each in the Army, Navy, and Air Force?

Mr. ROBERTSON. Yes.

Mr. MURRAY. And six in the Department of Defense?

Mr. ROBERTSON. Yes.

Mr. MURRAY. If you get the 275, how would the additional positions be allocated to the different branches of the service?

Mr. ROBERTSON. Following are the stated requirements: Army 85; Navy 89; Air Force 84; Secretary of Defense 17; a total of 275. Allocations would be made on the basis of determined needs.

Mr. DUFLON. That is the total requirement we have and in this requirement are the Public Law 313 positions that we are requesting to set up to take over people who would transfer from supergrade positions. That was the only point on that. We have this breakdown available which we will hand out and discuss later.

Mr. MURRAY. How many supergrade positions do you have at the present time?

Mr. ROBERTSON. I believe that comes out in the prepared statement, Mr. Chairman.

Mr. MURRAY. All right.

Mr. ROBERTSON. We are also handicapped in Defense in our efforts to improve the efficiency of management in areas other than research and development.

Until the passage of the Federal Employees' Salary Increase Act of 1955, Defense had authority in its appropriation act for not to exceed 200 grade 16, 17, and 18 positions. While this authority had been helpful, it had not adequately met our needs for these top level management positions.

Section 12 of the Salary Increase Act repealed our 1955 Appropriation Act authority, and amended section 505 of the Classification Act of 1949 by providing authority for not to exceed 1,200 positions in grades 16, 17, and 18 of the general schedule for all Federal departments and agencies except the Library of Congress, GAO, and FBI. This act also established ceilings of 125 and 325 respectively, upon the number of positions out of the 1,200, which may be in GS–18 and GS–17 at any one time.

Subsequent to the enactment of this law Defense Appropriation Act, 1956, was passed. This act again included a provision for 200 grade 16, 17, and 18 positions in the Department of Defense, subject to authorization by the President.

Because of the legislative history of section 633 of this Appropriation Act, it was decided that the Department would not request Presidential authority to use that section, but would use the authority of section 505 of the Classification Act for positions in grades 16, 17, and 18.

Use of the authority now contained in section 505 of the Classification Act has proven to be entirely unsatisfactory for two principal reasons: First, it does not provide enough positions to meet our actual needs, and second, it does not provide the Department with a firm number of positions upon which it can depend and over which it can exercise control.

With regard to the first point, our requirements for positions in GS–16, 17, and 18, based upon a recent survey, total 285 positions. These positions are not scientific and professional positions of the type I referred to earlier and do not duplicate any of the positions requested under the authority of the act of August 1947. Information comparable to that submitted for our scientific and professional positions has been prepared for our GS–16, 17, and 18 requirements and submitted to this committee for its consideration.

Mr. MURRAY. That is in the last section of the bill, H. R. 9350, is that correct?

Mr. ROBERTSON. That is correct.

Mr. MURRAY. Under this ceiling of 1,200 supergrades to be established through the Civil Service Commission, only 125 would be in grade 18, 325 in grade 17, and the balance in grade 16. You want authority to put them all in grade 18, do you not?

Mr. ROBERTSON. Let me check that. Mr. Wheeless will talk to that.

Mr. MURRAY. I understand you have 236 supergrade positions now?

Mr. WHEELESS. That is correct.

Mr. MURRAY. How many of those are in grade 16, how many in grade 17, and how many in grade 18?

Mr. WHEELESS. We have checked that recently, Mr. Chairman, and our proportion of jobs in 16, 17, and 18, based on what we are

asking the committee and our own evaluation of the jobs, would come out about in the same ratio as you now have in the 1,200.

Mr. MURRAY. Can you give us specifically the number you have in grade 18, the number in grade 17, and the number in grade 16?

Mr. WHEELESS. Yes, sir.

Mr. DUFLON. We have that chart, but with the revisions made, particularly at Redstone, we withdrew it, but we can have that information here today.

Mr. WHEELESS. We will give you that today.

Mr. MURRAY. All right.

Mr. ROBERTSON. The compiled information indicates both the 285 positions for which the proposed new legislative authority would be used and the research and development positions that are now carried as GS–16, 17, and 18 positions but which would be transferred to positions in the scientific and professional category under the proposed legislation. That is in these compilations.

Under the provisions of section 505 of the Classification Act the Commission has made available to Defense, out of the overall total of 1,200 positions, 236 positions in grades 16, 17, and 18. Along with the 45 positions authorized under the act of August 1947, these are all the top management and scientific positions available to Defense to manage about 60 percent of the Federal budget. No increases in the numbers of these top management positions can be expected under current statutory ceilings.

In its report on "Special Personnel Problems in the Department of Defense" the Hoover Commission emphasized the need to improve management in the Department and pointed out that, despite the fact that the total job of the Department is the biggest in the Federal Government, the proportion of top civilian positions is less than for the rest of the Federal Government. Although the Department has one-half the total civilian Federal employment, it has less than 20 percent of positions at salary levels above GS–15.

We are trying, as recommended by the Hoover Commission, to increase the number of civilian managers in our support activities and to create a better balance between military and civilian personnel in the top managerial positions in these activities. Lack of adequate statutory authorization for GS–16, 17, and 18 positions will, in time, necessarily limit this effort.

We are also trying to initiate strong programs of executive development that will produce competent civilian managers in our support activities, support being the backup for the combat forces. Such programs not only make use of persons in the Department who have invaluable experience and capability for advancement, but they serve to attract competent persons to the Department by providing reasonable career goals. Such development programs cannot operate successfully without top level positions toward which they can be directed.

Our second major problem is the lack of a specified number of positions upon which the Department of Defense can depend and over which it can exercise control without regard to the requirements of other departments and agencies of the Government. This problem arises out of the fact that Section 505 of the Classification Act establishes Government-wide ceilings and places control in the Civil

Service Commission for the division of available positions among the different agencies. The Commission has held that under this provision it cannot allot a fixed quota of positions to any agency.

This means that the Department of Defense cannot depend upon any specific number of positions being available to it. Nor can it depend upon being able to shift vacant positions within the Department as needs arise, since each individual position is controlled by the Commission. When a position becomes vacant in our Department, the Commission makes a determination as to the relative needs of the Department and other Federal agencies for the space involved. It does not necessarily follow that Defense will keep the position.

In amending the Classification Act last year to establish a total of 1,200 positions in grades 16, 17, and 18, as stated before the Congress provided an exemption from this ceiling for the Legislative Reference Service of the Library of Congress, the GAO and the FBI. I believe that the Department of Defense, in view of our mission and the complex management problems which we encounter, should be permitted also to have a fixed number of positions in grades 16, 17, and 18 and the desirable flexibility to use these positions where most needed, subject to the preaudit authority of the Commission as to appropriate grade levels.

That is what the legislation which we are discussing today proposes to do. In addition, it would provide Defense with a more adequate number of high-level scientific and professional positions. Enactment of the legislation would permit us to move those scientists who now occupy grade 16, 17, and 18 positions, to the more appropriate scientific and professional positions. It would thus free additional GS–16, 17, and 18 positions for use at top management levels where they are urgently needed.

In conclusion, I should like to say that we are very proud of the civilians, scientific as well as administrative personnel, who occupy key positions in Defense.

I consider our ability to attract and retain competent people for these positions to be at the very heart of our efforts to improve the efficiency of management in the Department of Defense and to maintain the technological superiority upon which the defense of our Nation largely depends. I believe that the legislation you have before you will constitute an important step forward and deserves your most careful consideration.

Mr. MURRAY. As I understand the situation, you have 236 supergrade positions today; is that right?

Mr. DUFLON. Yes, sir.

Mr. MURRAY. And those are allocated to you by the Civil Service Commission and come within the ceiling of 1,200, the maximum number under the Classification Act as amended last year?

Mr. DUFLON. Yes.

Mr. MURRAY. You want to return the 236 positions to the Civil Service Commission and get out from under this quota of 1,200 and establish your own positions up to 285; is that correct?

Mr. ROBERTSON. That is correct, with a group we can use between the important needs of the services, knowing that we have them and can plan their most effective use.

Mr. MURRAY. Of course that would give the Civil Service Commission 236 more supergrade positions to allocate to other departments of Government?

Mr. ROBERTSON. It would have that effect.

Mr. MURRAY. And there is no limitation, in this bill as introduced, on how many would be placed in grade 16, how many in grade 17, and how many in grade 18; that would be left to the discretion of the Department of Defense?

Mr. DUFLON. It would be done through the preaudit of the Commission and our own. It would be subject to that control.

Mr. MURRAY. How do you propose to allocate the professional and the scientific positions?

Mr. DUFLON. We have a breakdown on that.

Mr. MURRAY. Mr. Rees.

Mr. REES. First I want to commend you, Mr. Robertson, for making a very clear-cut statement.

Mr. ROBERTSON. Thank you.

Mr. REES. I am amazed that, having been on the job only 6 months, you have such a grasp of the situation.

Mr. ROBERTSON. I had a little running start in that I was on the Hoover Commission that made a study of this personnel problem.

Mr. REES. I was going to ask if you had spent some time on the Hoover Commission.

Mr. ROBERTSON. That is right.

Mr. REES. And that was one thing that brought this matter to your attention?

Mr. ROBERTSON. That is right.

Mr. REES. You say at the bottom of page 11 and the top of page 12 of your statement that "Although the Department has one-half the total civilian Federal employment, it has less than 20 percent of positions at salary levels above GS–15."

Of course that does not mean so much because each agency has different duties and different things to do. The Department of Defense is just different from the others.

Mr. ROBERTSON. But we have some awfully tough management jobs.

Mr. REES. I know you have.

Mr. ROBERTSON. The relative need is there. We are convinced of that. Defense is at a disadvantage in recruiting for good people against other government departments, because there is the feeling that in Defense they run into the military and there are not as many top places available, and we cannot get the people we need. We have some awfully good ones but we need to recognize that and keep them and recruit more.

Mr. REES. I believe you come from the great State of Virginia?

Mr. ROBERTSON. No, sir. That is Assistant Secretary of State Robertson. I am from Ohio, Cincinnati.

Mr. REES. Thank you.

Mr. MURRAY. Any questions, Mr. Rhodes?

Mr. RHODES. No.

Mr. MURRAY. Mr. Lesinski?

Mr. LESINSKI. I was interested in the remark you made that you are proud of your civilian employees. I realize you have been in the Department of Defense only 6 months and probably are not familiar with all the details. I have found through past experience that there have been many acts of aggression against the civilian employees. There is one little thing with the military that is wrong and that should be

corrected. The military are moved about every 2 or 3 or 6 months, or every year or 2 years. They do not have the time to grasp full details. Under normal procedure in the Defense Department you can move them about, and that is proper, I suppose, because of the nature of defense. However, the difficulty is that an officer in charge of an installation is not there long enough to make the proper decisions. You should have proper personnel for the details. Occasionally it happens that there is not the proper coordination between the military and civilian personnel. At times the military will be in the position of not upgrading civilians to the extent they should be. We should judge a man not because of his politics, but his qualifications for the job.

Mr. MURRAY. Will you lift your voice a little. The reporter is having difficulty hearing you.

Mr. LESINSKI. I am sorry.

I realize we do need qualified people. The new personnel you request are going to be recruited how?

Mr. ROBERTSON. Well, take for example what I happen to have been following closely because it is a matter of great urgency, at Redstone Arsenal; I think the Under Secretary of the Army, Mr. Finucane, and General O'Meara can outline their recruiting at Redstone.

Mr. FINUCANE. I cannot give you at this moment the exact activities, but we have tried very hard to institute a program at Redstone of advertising for this type of scientific help we need all through the South, in fact all through the country. Two things have limited our ability. One is the necessity for security before the whole project became more or less public knowledge. The other is the problem of getting these positions. 19 spaces were transferred to us only last Thursday, but of course the enactment of legislation of this type will make our job simpler.

Mr. LESINSKI. Would you oppose an amendment to the bill that none of these positions shall be filled through political influence?

Mr. FINUCANE. I certainly would not. I would not oppose that amendment.

Mr. LESINSKI. There is no question, is there, Mr. Robertson, that the salaries of qualified personnel of this nature in private enterprise have increased above those paid by the Federal Government in recent years?

Mr. ROBERTSON. I would say in these highly scientific and professional classifications the rate structure in private business makes it very attractive for people to leave the Government and go into some of these jobs. That is why I mentioned that one can only feel proud of those who stay with us, because their work is of such vital importance to the Government, and many have stayed with the Government at some sacrifice. That also applies to the military.

Mr. LESINSKI. Is it not true that many of the military contracts that have been handled by the Army or the military can be done cheaper than by transfer of the contract to a private concern like General Electric?

Mr. ROBERTSON. I am not sure I understand your question. Is your question whether the Government can do it cheaper than private enterprise?

Mr. LESINSKI. Yes.

Mr. ROBERTSON. I would say so much depends on the circumstances. In the case of Redstone, that was a Government arsenal where much research on guided missiles had been done in the past. When we come to many of the difficult programs, of course the aircraft people were skilled in developing the nuclear propulsion for guided missiles. It would be impossible to do the order of magnitude of jobs we have in our programs today without using to the maximum the facilities of private contractors.

Mr. LESINSKI. I am not disputing the fact they should be given contracts, but could the Federal Government do it cheaper and with more secrecy than private industry?

Mr. ROBERTSON. I will venture this statement: I think the economy in general will lie on the side of the private companies.

Mr. LESINSKI. As a rule?

Mr. ROBERTSON. That is my opinion.

Mr. LESINSKI. From past experience, but it is not the general rule?

Mr. ROBERTSON. It is so difficult to make an exact comparison. In certain lines of ammunition loading you can get direct comparisons, but in aircraft or missiles so much of what the Government is doing is in the research and development field.

Mr. LESINSKI. Say for instance in a new field with no past experience, where a company or corporation takes over the contract of development, in a situation like that does the Federal Government or private industry do it cheaper?

Mr. ROBERTSON. I just do not know of any direct comparisons to which I could point.

Mr. LESINSKI. It is my information that General Motors, General Electric, and various other companies had been working on the development of a particular turret and they could not develop it and it was the Army that did it.

Mr. ROBERTSON. In these direct comparisons, I am sure that Under Secretary Finucane has analyzed many of those competitive bids and compared them with others.

Mr. FINUCANE. Mr. Lesinski, in the Army we have endeavored to do our research work with our own people. That has been our historical tendency in the Army, as you pointed out and it still is.

The other services, for reasons of their own, well founded reasons, do not do that to the extent we do. Maybe they do not have an aresenal, for example, or maybe the commercial work they do on airplanes is sufficiently similar to other work.

One of the reasons we are asking for this bill today is to protect our Army position. We can, by a research and development contract, go to a commercial company, we do not care what salaries he pays his employees and in that way we can get top scientists.

Where we are doing our own work, we do not have that avenue of going around through P and P funds so, therefore, we are most anxious to make our employees less susceptible to be moved over into that other area.

Mr. LESINSKI. I am not asking questions on that because I realize that there are certain scientific fields that the Army is not prepared to go into. It is natural and it is obvious that that would be true, but the point I was trying to show is that there is a limitation, and a good limitation, and it is hard to define it. I cannot define it. It is

difficult to find out how far private industry can develop these projects and where they cannot definitely do it.

However, there are points where the Army has done a lot better than private industry in development work.

Mr. ROBERTSON. Mr. Lesinski, may I ask General Putt, who is on the Air Force Research and Development, to comment on that? He has had a great deal of experience both in the use of Government research facilities and private enterprise facilities in the aircraft and missile field.

General PUTT. The complete answer to your question is most difficult; that is, can you do things cheaper in the Government or in industry. I think you have to examine that kind of a problem by looking at the specifics, and I think it is very hard to generalize in answering such a question.

Speaking only for the Air Force, you will find that the Air Force itself, although it appears that we have lots of large facilities and things of that nature, in which research and development could be done, actually industry does practically all of the research and development for the Air Force and the facilities that the Government has, that the Air Force has and operates, are largely for the testing and evaluation of what industry has produced for the Air Force to determine that it meets with our specifications, and that we have gotten what we paid for with the taxpayers' dollar.

The scientists and the engineers that we use in the Air Force are for the development of specifications rather than for the development of hardware itself, and to monitor and to supervise the work that industry does for us.

The Army and Navy has slightly different plans between what is done in industry and what is done in the Air Force.

We have a very small percentage of the Air Force objective which goes to what we might call in-shop research and development, and, in general, the only things that we do in our own facilities that are of the type of thing that might be done in industry is where there is just no facility and where no capability has been developed to do the kind of work that is required.

Mr. LESINSKI. The thing that I was trying to bring out was the fact that the Army cannot do all of the work, and that private industry cannot do all of the work. There are some who argue that the military should not do a single thing in this field. I disagree with them. On the other hand, there are some who say the military should do it all, and I disagree with them.

Mr. ROBERTSON. I agree with you completely, Mr. Lesinski.

Mr. LESINSKI. I am trying to clear the air here.

Mr. ROBERTSON. Generally, it takes a combination of the team.

The CHAIRMAN. Is that all, Mr. Lesinski?

Mr. LESINSKI. I have one more question, Mr. Chairman.

The CHAIRMAN. Proceed.

Mr. LESINSKI. This idea is 2 or 3 years old, and I want to commend you gentlemen and the chairman for introducing this legislation at this time. Although it is old, it is vitally necessary.

Mr. ROBERTSON. Mr. Lesinski, I was not here previously and I am not able to point it out exactly. I would say that this has been a problem, and it ties into the problem that you mentioned earlier, that

is, this very close relationship that Defense has that other Departments do not have in respect to the use of military and civilian skills, and their career development.

That is a point that the Hoover Commission, the Subcommittee on Special Personnel Problems in Defense, addressed itself to in great detail. In it, they analyze the needs of 5,000 management people, both military and civilian, who would work side by side where the national rotation problem was involved.

Now, the rotation problem does create other problems.

I think it was probably as the result of that over a yearlong job study of the problems of how to create better career development programs that this matter really came into focus.

On that point, I would like to say to you that only yesterday morning Mr. Wilson and the three Secretaries and their Assistant Secretaries for manpower and personnel spent the entire morning discussing how to best implement these complex matters. I am sure that it is something that will not happen overnight. It is something that a program of development can be helpful in.

Mr. LESINSKI. Will the people who will occupy these new grades be those who are primarily advanced from their present grades where an opening exists, or will they be taken in from the outside?

Mr. ROBERTSON. As I understand the plans, about two-thirds of them will be promotions or reallocations made of present personnel, present incumbents, and the balance will be from the outside. Is that right?

Mr. DUFLON. That requires some explanation.

I think it will be a little higher than that in the area which we are talking about; that is, those who are brought in.

Mr. LESINSKI. That is all, Mr. Chairman.

The CHAIRMAN. Mrs. St. George.

Mrs. ST. GEORGE. Mr. Robertson, I have been most interested in your report and I agree with you that this is something that should be attended to immediately.

There is one question I would like to ask.

On page 3 of your statement you say:

> It also provides that persons may be selected to fill these positions without competitive examination upon approval of the proposed appointee's qualifications by the Civil Service Commission.

I would just like to know what the object of that is, and in what way will that improve service?

Mr. DUFLON. In connection with the P. L. 313 positions, our experience has shown that much of the scientific and technical jobs depend upon the initiative of the individual and his particular background, and it permits us to do a recruiting job in those cases. For example, where we have a man with relatively heavy research background and experience and he is a producer in almost any field in which you put him, we ought to be able to compensate him for that.

It is that thoroughness, of course, that you pay for in fixing the pay for the job, when you find a man to put in the job.

We could have the same people and pay two different rates. This permits the Commission to get in and do a relative study of individuals who might be put on the job, and it is a check against how much is paid, against a man's prior earnings and it is also an audit of the job itself.

Mrs. ST. GEORGE. In other words, it makes it easier to recruit this type of people?

Mr. DUFLON. It certainly does.

Mrs. ST. GEORGE. Because I presume that a lot of them would not submit to a competitive examination, as they would not have to.

Mr. ROBERTSON. This is, generally speaking, the technique which is used by industry in seeking these highly skilled professional people.

The CHAIRMAN. That provision is already contained in Public Law 313.

Mr. DUFLON. Yes, sir, that is right.

Mrs. ST. GEORGE. Thank you, Mr. Chairman.

The CHAIRMAN. Mr. Gross.

Mr. GROSS. Mr. Robertson, what are your duties as Deputy Secretary of Defense?

Mr. ROBERTSON. My duties are to assist the Secretary and to act for him in full authority on matters which he assigns to me, and in his absence, to act within my own judgment.

Mr. GROSS. You are not in the personnel management end of the Department of Defense?

Mr. ROBERTSON. No, sir, I am Deputy Secretary of Defense.

Mr. GROSS. I want to clear up one thing. Is it a fact that under this law you could put all of this increased personnel in grade 18?

Mr. ROBERTSON. Well, I think that is clarified by the preaudit by the Commission.

Mr. GROSS. Whatever that means, I am not too sure, but the fact remains they could all be put in grade 18, is that correct?

Mr. ROBERTSON. Yes, sir, if Defense and the Commission both determined that grade to be proper.

Mr. GROSS. Preaudit or no preaudit?

Mr. ROBERTSON. Yes.

Mr. GROSS. How many of the top brass at the Pentagon, uniformed personnel, do you propose to do away with if you are granted this increase in the supergrades?

Mr. ROBERTSON. We are trying to screen all the time the utilization and need for both military and top civilian leadership.

Mr. GROSS. But you are not prepared to say that there would be any reduction in the number of uniformed brass in the Pentagon if this bill were put through?

Mr. ROBERTSON. No, not by virtue of this.

Mr. GROSS. Why not?

Mr. ROBERTSON. We have growing needs, particularly in some of the missile programs. There are only 17 of them involved in the Office of the Secretary of Defense. Most of these positions are in research laboratories, missile development centers, electronic centers and places of that sort. We really do not come into the problem of the balance between what we have, as you refer to it as the brass of the Pentagon. It is a relatively small part of the total.

Mr. GROSS. Now, with this missile program coming up, I assume that this legislation is timed to come before this committee now, to rush the bill through?

Mr. ROBERTSON. No, sir. We have been working on this virtually ever since I have been here on the job.

Other men have been preparing it and talking with the Commission. We were rushed there to get appropriate help when the decision was

reached as to just how Redstone missile was going to come, and the Commission was very helpful in getting us interim relief.

The Secretary and I, and General O'Meara went down there, and at that time we set forth to get the kind of help that they needed urgently.

This is a matter that grows not only out of a thing which has been developing but also out of the Hoover Commission studies which have been analyzed since that report has been in the hands of the personnel Assistant Secretaries, and the Secretaries of the Departments, so that that work has been moving right along.

Mr. GROSS. I think the Secretary is probably well aware of the fact that there is a great deal of controversy over the missiles program; is that correct that there is a great deal of controversy over it?

Mr. ROBERTSON. There certainly are some differences of opinion on it.

Mr. GROSS. Are you going to spread these new people out among the various branches of the Service, irrespective of the fact that there is a great deal of sentiment for concentration of the missile program under a single agency?

Mr. ROBERTSON. I am sure that there is the greatest cooperation between the Services in their respective roles.

Mr. GROSS. And each one jealous of its role?

Mr. ROBERTSON. Each one trying to do the best job that he can do under the circumstances.

Mr. GROSS. Do you not think it would be better to hold this legislation up a little while to find out where we are, until it is determined whether there is to be a new Assistant Secretary or some boss of this missile program under which all of the development would be concentrated?

Mr. ROBERTSON. No; this work is related to the whole program as organized within the Air Force, the Army and the Navy groups, and I think the presence of a special assistant to Mr. Wilson is not urgent. Mr. Wilson is working on that. It has been part of the program right along to get such a man.

In the meantime, I have been assisting wherever possible to make sure that there were no bottlenecks in the program.

Mr. DUFLON. Could I just point out that the bill would place authority for the allocation, or distribution, of these jobs in the Secretary of Defense.

For example, the existing authorized jobs, which are Public Law 313 positions, are allocated by statute, 6 in OSD and 13 in each Service, which gives a certain inflexibility to the movement of those positions.

Redstone was a good example where there were no positions available to be transferred across Service lines.

There would be flexibility in this bill to meet this interorganization program emphasis, and I believe that reaches the point you raised that if the future were to bring about changes in groupings or programs, centralizing and decentralizing, that this bill would be too inflexible to meet them.

I feel it would not be too inflexible.

Mr. GROSS. You spoke of rotation.

Mr. ROBERTSON. Yes, sir.

Mr. GROSS. Would that mean only uniformed personnel?

Mr. ROBERTSON. Officer rotation; yes, sir.

Mr. GROSS. Now, the question is, must you rotate a man with a certain skill? Irrespective of his usefulness in a particular job he holds, must he be rotated?

Mr. ROBERTSON. Mr. Gross, on that point, I would say in research and development, for example in the Air Force where we have been giving tremendous emphasis to the missile program, they have what they call the satellites program and it has in it officers who are highly skilled in this field, and we are addressing ourselves as the result of the Hoover Commission's studies on readiness to the question of further amending the matter of officer rotation in these specialized field supporting activities which include scientists, research men, managers, accountants, and folks of that sort.

I think the present degree of stabilization in the research and development field is something that is specially geared for research and development now. I think that is pretty much true in both Naval Ordnance and Army Ordnance.

Mr. GROSS. Is it discretionary or not discretionary that a man with a special skill be rotated?

Mr. ROBERTSON. It is within the authority of the Chief of Staff of the service.

Mr. GROSS. It is within the authority of the Chief of Staff of the service?

Mr. ROBERTSON. Yes.

Mr. GROSS. As to whether a man is rotated?

Mr. ROBERTSON. That is right.

Mr. GROSS. Would you say that you are making the best use of the skilled men that you have in the Defense Department, in the various branches of the services?

Mr. ROBERTSON. I would say that we are improving definitely. I would like to have General Putt answer that question.

General PUTT. Secretary Robertson has, I think, quite accurately described what is happening in the research and development personnel field, as far as stabilization of positions is concerned.

We have been concerned with this for a good many years, and over the last 2 or 3 years great progress has been made in keeping our really skilled military research and development people in place.

I think you will find now that the average is somewhere between 3 to 4 years, and that many examples will go far beyond that.

Mr. GROSS. General, let us get away for a moment from research and scientific knowledge. How about those who have other particular skills?

General PUTT. I am not in the normal personnel business and I think that others here could answer that better than I can.

Mr. GROSS. Perhaps I should address my question to the Navy, then. I know that there are competent attorneys in uniform in the Navy who do not have staff status.

Mr. ROBERTSON. Mr. Pratt is Assistant Secretary of the Navy for personnel matters and I will ask him to comment on that.

Mr. MURRAY. We are anxious to confine ourselves to this bill. I had hoped to get through with it this morning.

Mr. DUFLON. Did you want to permit the Navy to answer that question?

Mr. PRATT. What is your question?

Mr. GROSS. I understand that there are competent attorneys in uniform in the Navy who do not have staff status.

In other words, it is my understanding that an attorney in the Navy in uniform does not have staff status. Is that correct?

Mr. PRATT. They do not a have separate staff corps of lawyers in the Navy, that is correct.

Mr. GROSS. Why not?

Mr. PRATT. We feel that our military lawyers in uniform can be more valuable if they do not have separate staff status.

Mr. GROSS. On what basis do you say they are more valuable?

Mr. PRATT. Very many of the problems with which they have to deal relate to military discipline.

The experience that a man gets as a member of a line organization, we feel, makes him much better qualified to do his job as an attorney in that field.

We do have one class of attorneys and it is one which we will have from now on. They are called limited special duty officers. That is a subdivision of our line classifications.

These attorneys, we feel, should be given both types of experience. They should be given some staff duty and they should be given some postgraduate instruction in military subjects in order to make them better qualified to do their jobs as military lawyers.

Mr. GROSS. What is the incentive for an attorney to make a career of the Navy if, at the whim and caprice of a superior officer, he can be shipped out for duty aboard a destroyer, having had no previous deck experience, or any other experience of that kind.

Mr. PRATT. We do not ship people out by mere caprice.

Mr. GROSS. But you can do it, can you not?

Mr. PRATT. If we are not good at our job, we can do it.

Mr. GROSS. Well, they do not have staff status as they have in the Army and I believe in the Air Force. What I am trying to get at is, are you making proper use of the skills of those attorneys that you have in uniform in the Navy? I do not think you are.

That is all.

The CHAIRMAN. Are there any further questions on my right?

Mr. GUBSER. No, sir.

The CHAIRMAN. Are there any questions on my left?

Mr. MOSS. Yes, Mr. Chairman.

The CHAIRMAN. Mr. Moss.

Mr. MOSS. I notice you have here first a table of gross total requirement, 442 positions. Under the legislation before the committee, you would have 285 authorized, is that right?

Mr. ROBERTSON. I do not have the table before me.

Mr. MOSS. In column 3 on the first page, you have 442 as the gross total requirement.

Mr. ROBERTSON. Yes.

Mr. MOSS. And 285 would be authorized under the legislation which is proposed before the committee at this time.

The other 150 positions would be handled in what manner, or how would they be allocated?

Mr. ROBERTSON. They would be of the Public Law 313 type.

Mr. MOSS. Is it desirable to segregate the 2 if you have a gross total requirement of 442?

Mr. ROBERTSON. Yes.

Mr. MOSS. I understand that you propose the same degree of flexibility for the 285 that is presently enjoyed under Public Law 313, is that correct?

Mr. ROBERTSON. No, sir.

Mr. Moss. You would still have 157 positions where you would have the right to recruit them without a formal examination?

Mr. ROBERTSON. That is correct.

Mr. Moss. And the 285 would require formal examination?

Mr. DUFLON. They would be under regular classification act standards.

Mr. Moss. And the 285 would merely be a firm commitment to take the place of the allocations under that overall 1,200 ceiling you now receive from the Civil Service Commission?

Mr. DUFLON. That is correct.

Mr. Moss. Increasing the number from 236 to 285?

Mr. DUFLON. Yes.

Mr. Moss. How many of the 236 supergrades are now used by personnel engaged in research and development?

Mr. DUFLON. 79.

Mr. Moss. 79 of the 236?

Mr. DUFLON. Yes, sir.

Mr. Moss. You would not shift any of those as Public Law 313 type?

Mr. DUFLON. Yes, sir. Our effort is to draw a distinction between the administrative type of jobs and others, and those which, if we had had Public Law 313 positions, we would have put in there from the start.

Mr. Moss. One hundred and fifty-seven would be the total number of research and development personnel. The remaining positions of the 442 would be management positions?

Mr. DUFLON. Two hundred and seventy-five would be the total number of research and development positions. One hundred and fifty-seven of these would be positions now in, or proposed for GS 16, 17 or 18 positions. This leaves 285 as the figure on management positions. We actually have 236 of those at present. Two hundred and eighty-five represents a net increase of 49 exclusive of the positions that would be made available by transferring 79 persons to Public Law 313-type positions.

Mr. Moss. Then how many of the 17 positions in the Office of the Secretary of Defense would be management people; would they all be management?

Mr. DUFLON. The 17 figure is entirely Public Law 313 positions, where they would be professional and scientific of a highly technical nature.

Mr. Moss. And they would all come out of the 157 under Public Law 313?

Mr. DUFLON. They would all be included in the 275 scientific and professional positions covered by H. R. 9350.

Mr. Moss. Do you not think it would be well at this time to have it clearly delineated in the Department as to the uses you are going to make of them? If you are going to take the positions authorized by this legislation and hold them aside for management purposes, and the Public Law 313 positions for research and development and scientific and technical personnel, would it not be well to clearly segregate them?

Mr. DUFLON. We are making every effort to do that. These booklets have descriptions of the jobs involved today and the titles and the nature of activity involved.

When you get into this definition of what is scientific and what is professional, our actual use of those jobs under Public Law 313 has been technicians, engineers, and so forth, and in one instance, an M. D.

So we have drawn a difference between pure administrators, professional and scientific individuals, and we will check their competence, which I think is the main thing here.

Normally, the 16, 17, and 18 grade positions are to get individuals who work in top management jobs into the proper grade level.

What we are trying to do here is to take out of the supergrades, those persons who are in purely scientific positions by these other criteria.

Mr. Moss. Then the 157 would be exclusive scientific and professional, engaged in research and development work?

Mr. DuFlon. Yes, sir; and we have each one of those 157 positions justified individually in these documents.

Mr. Moss. Can you recruit the caliber of professional and technical personnel that you require in the Department of Defense at a $15,000 ceiling, or a $17,500 ceiling if the law passed by the House last year and now pending in the Senate, H. R. 7619, is enacted? Can you recruit them at $17,000 a year?

Mr. DuFlon. We could if the man who remains in the job after the Commission has looked at it is considered to be worthy of that level. We currently, as you know, have some of these on the rolls.

Mr. Moss. My question is more to the point that you are in a highly competitive field.

Mr. DuFlon. Yes; we are.

Mr. Moss. According to the newspaper advertisements and other indications, it is an extremely competitive field.

You are proposing here to employ top talent.

Mr. DuFlon. Our appeal cannot be solely on a monetary basis. I do not think that could ever be the case in the Government in general.

What we are trying to do here is to lessen the gap between the money that would be paid in industry and the amount of money that we can pay here to get that same talent in the Government. We still have to rely very highly on the motivations of the individual involved and whether or not he feels strongly about defense, and whether or not he wants to dedicate himself to the type of program we are engaged in.

Mr. Moss. You feel that there is a sufficient number of such individuals who can afford to do that, to meet your needs?

Mr. DuFlon. One of the continuing amazing factors in our program is that, given any kind of an equal break, these fellows will stay with us.

Answering your question specifically, I think we can meet our needs with Government pay because of the nature of our programs, and I think the consciousness of these scientists of the importance of these measures or programs will influence them.

Mr. Gross. Will you yield, Mr. Moss?

Mr. Moss. Yes.

Mr. Gross. How will the Defense Department compete with its own cost-plus-fixed-fee contractors in securing personnel in even grade 18?

Mr. DuFlon. We are faced with that problem, and there is no getting around it. We are still in competition with ourselves. The

competition is not exclusively between industry and the Government because the industrial competition is raising the wages faster than would be the case if we were just in it by ourselves.

Mr. GROSS. I say this because I saw the other morning where 10 officials of the North American Aviation Co., which is guaranteed a $38,000 profit on every fighter plane that it manufactures for the Government, split up among themselves more than $1 million in salaries and bonuses. How do you expect to compete with that situation?

Mr. DUFLON. I do not think that we can compete with it as such. I think our appeal must be on other grounds. We are trying to retain people that we know are needed now in our organization. In making recruitments of new talent, I think it is very heavily weighted from the standpoint of the motivations back of the people that we have to approach.

Mr. GROSS. I have been watching every paper to see when the Air Force is going to reevaluate its contract with the North American Aviation Co. but I have failed to see anything.

Thank you, Mr. Moss.

Mr. MOSS. Are you not primarily seeking the technical or professional person in the research and development field, and are you not primarily competing with yourselves there because of the fact that most of the work being done by the private companies is, in fact, being done under contract with the Department of Defense?

Mr. ROBERTSON. If I may answer that, there is no question that the terrific impetus that the whole Defense effort has had is creating a strain on the supply of this type of people, and that through recruitment and movement into these Defense jobs of a critical nature and the rate at which those transfers can take place, is one of the important problems that we have to deal with in getting the kind of program needed to meet the job at hand.

Mr. MOSS. That is an unavoidable impact.

Mr. ROBERTSON. That is right.

Mr. MOSS. That is a result of the scope of the activity.

Mr. ROBERTSON. Yes, that is a result of the scope of the activity.

Mr. MOSS. The concern that I have is in setting up these positions and giving a look at the problem with the big job to be done, I am wondering how you can recruit these people at $15,000 when I read every day in the newspapers that there are certain types of people wanted at a $12,000 starting salary plus many of the fringe benefits which, at one time, may have been exclusively characteristic of Government work but is no longer.

Can you adequately recruit the type of personnel that you need in this very important program if you are only $3,000 above what appears to be almost the entrance salary in many industrial activities?

Mr. ROBERTSON. I think the best answer that I can give to that is that we have been able to make progress. We feel that it is a tough competitive situation. The total load is heavy. Also there are many motivations that come to bear on people in making these decisions that have brought them into our service.

For example, right at Redstone Arsenal, I understand in the last few months, their recruitment has been very encouraging and also in other places that General Putt and Admiral Bennett are dealing with, and I understand that they are having reasonable success in their recruitment.

Mr. Moss. Do you think it would be helpful in the Government if we had a professional and technical salary schedule—taking it out of the Classification Act entirely, recognizing that we are going to have to have some improvements of recruiting, not only in Defense, but in Commerce and in Agriculture and in other activities of Government where you have a requirement for this type of personnel—if we recognize that we need a very realistic schedule to our current Classification Act which will permit the attraction of these people as a part of the career service?

Mr. ROBERTSON. I think that is one of the most important things we have to face here in our kind of government, the ability to attract the kind of top leaders in these management kind of jobs, in addition to the professional and scientific.

I happen to have been a supporter of the concept of the senior service, which would give you the flexibility of keeping some of these top management skills in these tremendously important jobs, and I think discussions in the Congress at the moment of the pay and the kind of people we need to run these vast jobs is of the highest order of importance.

Mr. Moss. We are attacking this piecemeal where we probably should look at the problem on a much broader basis and come up with a much more permanent answer.

Mr. ROBERTSON. I believe the recommendations of the Hoover Commission, not only Dr. Dodd's committee, throughout the Government in general, but also relating to special problems in the Defense Department, I think those two take a very good look at it from the overall standpoint. I think this problem fits into the framework of that on a sound basis.

Mr. ALEXANDER. Will you yield, Mr. Moss?

Mr. Moss. Yes.

Mr. ALEXANDER. Mr. Secretary, recognizing that even this is not quite what you are asking for in this bill, you are still going to have to have the problems of recruitment in the scientific field; are you not?

What is the policy of the Department of Defense with respect to the training of the military in the scientific field?

Mr. ROBERTSON. We have a great deal of training going on in the military services in these special fields.

Mr. ALEXANDER. Is that after they have finished the Academies?

Mr. ROBERTSON. Yes, sir.

Mr. ALEXANDER. Has there been any thought about picking out particularly scientific-minded students and giving them further training in that field?

Mr. ROBERTSON. Mr. Alexander, I wonder if I might call on 1 or 2 of the Navy's representatives to elaborate a little more on what we are doing in those fields?

The CHAIRMAN. Yes; go ahead.

Mr. ROBERTSON. Mr. Pratt.

Mr. PRATT. Mr. Alexander, there is a variety of that type of programs in the Navy. Let me cite one example only, which is perhaps typical, the so-called engineering duty officers. These, for the greater part, are graduates of the Naval Academy who have a particular desire or bent or interest in engineering. These people are designated as engineering duty officers in order that their assignments may be properly and permanently controlled throughout their military career and to bring out the best of their talents.

It includes the various post graduate courses at scientific schools and universities in a variety of fields for the Navy, depending upon the line or special talent which that officer has. We have the same kind of training programs in other specialized areas.

Mr. ROBERTSON. I wonder if I may ask Mr. David Smith, Assistant Secretary of the Air Force for Manpower, Personnel and Reserve Forces to also comment on that point?

The CHAIRMAN. Yes.

Mr. SMITH. We have in the Air Force a large number of our young officers who come into the Service from ROTC rather than from the Academy, and a large number of them come to us with a considerable amount of scientific training, when they first enter on duty as young officers.

In addition to that, we have several programs under which many of them are sent to civilian universities and colleges for additional training.

In addition to that, we have a service operated advance school which they attend to qualify, and so a great many of our officers go through advanced training in scientific subjects.

Mr. ALEXANDER. What effort is made to use the drafted personnel who have a scientific background? What effort is made to place them in the particular field in which they have been interested before, rather than those who have had training from the Academy?

Mr. ROBERTSON. Mr. Alexander, the draft is out of my province, and if I may, I would like to call Under Secretary Finucane to comment on that.

Mr. FINUCANE. With our drafted people that are coming into the Army, we offer them a choice of their activity, and we also screen them for their various types of tests and the talents they might have and the likes they have and what skills they have.

If you went up to Aberdeen Proving Ground, which is one of our research and development ordnance installations near Washington, you would find many of those are very competent people and they are generally studying at night. They are bettering themselves, and they are using the Army to better their professional skills, and their education.

The great worry that we have in that connection is about the time they become of the utmost value to us their tour of duty is over and they are free to go on with their own civilian pursuits.

The career incentives that Congress gave us last year have done very much for us in enabling us to keep some of these people, and we are bending every effort that we can to make the service attractive so we will be able to keep them where they are. Many of these students come out of the Army and go through engineering schools.

Mr. ROBERTSON. General Canine has some special problems in this field, and I would like to ask him to comment on it.

General CANINE. Mr. Alexander, in my agency, the National Security Agency, I keep approximately 100 spaces for military people, for drafted professionals from the Army, from the ROTC and the Air Force, men who have engineering educations and those are funneled right into me and we are using them for the entire time of their required tours of duty under the draft act and some of them we suborn to stay with us.

In that one specific case, those people do not go out and carry rifles or mow grass, but they are used for that which they can do best.

Mr. ALEXANDER. They work right along with the professionals?

General CANINE. They work right along with the professional civil engineer whom we have very often from an engineering school or college.

Mr. CRETELLA. Will you yield, Mr. Alexander?

Mr. ALEXANDER. Mr. Moss had the witness.

Mr. MOSS. I will yield.

Mr. CRETELLA. In line with what you have just mentioned, in answer to Mr. Alexander's question, that these men are funneled and channeled into you, how soon is it after they come into the service that that occurs? That is, bearing in mind what the gentleman before you said, that their tour of duty is ended and their value to the Government is lost because they go into private industry?

For instance, I had a boy who was a scientific major and he was pounding a typewriter out in the hospital in the Midwest, just making copies of reports. I intervened and he got into work he was qualified to do. Why do we have to go to that extent when you have a man who is qualified to give more adequate service to the Government?

General CANINE. I am not the best witness as to the entire personnel policies of the Army or the Air Force, but they manage to keep my spaces full all the time. It is approximately 100 spaces.

We get second lieutenants right out of college from the Air Force, and we get privates directly from basic training in the Army, sir.

Mr. CRETELLA. My question was, How soon after they get into the service, the Army, the Navy, or the Air Force, do they finally get into the work that they are qualified to do?

General CANINE. Insofar as the Army is concerned, it is 16 weeks. When they have finished their basic training, they are assigned to my agency.

With respect to the Air Force, they go to Lakeland and are assigned to the Air Force Security Service and we get them about a month later.

So, we get almost 2 years' service out of the ROTC people.

The people who are drafted by the Army take their basic training, and they are ordered direct from the camp where the training division is located, direct to Washington for duty with me.

Mr. MOSS. I have just one more question.

On this question of complete cooperation between the services, I think we all recognize that there is some value of competition between the services as well.

How closely coordinated is the research and development work of the Air Force, the Navy and the Army, so that there is an avoidance of basic research and basic development?

Do you feel it is at a minimum in order to prevent any unnecessary duplication, or do you think that there is room for improvement?

Mr. ROBERTSON. In respect to the missile program and certain phases in respect to the atomic program, propulsion and so forth, we have in Defense an Assistant Secretary of Defense for Research and Development, Dr. Furnas, who was recently confirmed. Secretary Quarles of the Air Force formerly filled that position.

Dr. Furnas' mission is to very carefully screen the assignments and the undertakings within the 3 services of research in their respective fields, and in many instances the use to which the weapon system is to be put. That has enabled a different concept basis, and in many instances the approach is different, and properly so.

I have seen a great many instances of careful clearance and coordination.

Only this past week, we had an all afternoon meeting which was on the order, or the magnitude of it was of such importance, that I sat with the Assistant Secretary for Research. The cost of rearranging that may involve $1 million or $2 million over the next few years.

That is assisted by boards of scientific observers in the respective fields.

Mr. Moss. You feel that the liaison, the cooperation, and coordination is quite adequate?

Mr. ROBERTSON. I think that there are areas where we still have room for improvement. I think it is being approached in the most objective manner between the three research and development departments of the services, and I think where there is a competitive approach to accomplishment that, in itself, is proper, because we are watching very carefully to see that the competitive approaches are not just simply competitive in respect to the same thing.

For instance, in this missile field, one of the very important decisions was whether we could utilize existing facilities, and also move forward in ways without becoming competitive with what the Air Force is doing. In that case, the Army and Navy joined forces in a most effective and cooperative way and are pursuing it that way, and that, in turn, is being watched carefully not to interfere with that which the Air Force is doing.

Mr. Moss. Mr. Chairman, I would like to ask that we have supplied for the record at this point the rate of turnover in the types of positions that we are discussing here, say, for the last 2 or 3 years.

The CHAIRMAN. As to each of the services?

Mr. Moss. Yes.

Mr. ROBERTSON. I think we can get that in good shape.

The CHAIRMAN. Very well; that information will be supplied for the record.

Mr. ROBERTSON. Yes, sir.

(The matter referred to is as follows:)

Turnover in 45 professional and scientific positions, Department of Defense, calendar years 1954 and 1955

	Office, Secretary of Defense	Army	Navy	Air Force	Total
1954					
1. Separations	1	2	4	3	10
(a) To industry	1	1	2		4
(b) To Government		1	2	2	5
(c) By death					
(d) Other				1	1
2. New hires	1	4	3	3	11
1955					
1. Separations	1	4	6	2	13
(a) To industry		1	2		3
(b) To Government	1	2	2	1	6
(c) By death		1	1		2
(d) Other			1	1	2
2. New hires	1	2	6	5	14

Mr. GROSS. Mr. Moss, will you yield?

Mr. MOSS. Yes, Mr. Gross.

Mr. GROSS. Mr. Robertson, I have just one more question.

Am I correct in assuming that the civilian employment in the 3 branches, the Air Force, the Army and the Navy, is approximately the same, as to numbers?

Mr. ROBERTSON. Do you have that figure?

Mr. WHEELESS. The Air Force is the smallest of the 3 in the total civilian employees.

Mr. GROSS. In number of civilian employees?

Mr. WHEELESS. That is right.

Mr. GROSS. I note 74 for the Army, 77 for the Air Force and only 40 for the Navy. Why is that?

Mr. DUFLON. That is a matter of the estimated needs of each service. When added to the estimated needs for scientific positions, I do not believe the total combined is much different. Is that correct?

Mr. Wheeless. Yes, it is on the same order of magnitude. I have not totaled it up.

Mr. DUFLON. We have been trying to evaluate the needs of the services and, by having control over all these positions placed in the Secretary of Defense, we can take care of proper needs at any given time.

Mr. ROBERTSON. It does happen that the 3 services are quite equal, showing 74 and 79, but those are not specific requests.

Mr. DUFLON. On your earlier request, we can now give you the numbers of GS–16, 17, and 18 positions we now have, and then the percentages.

We have that information, which was available in the material supplied you, worked out in tabular form. Would you like to have me read it off for the record?

Mr. GROSS. All right.

Mr. DUFLON. Taking 236, the total number of supergrades we now have, as 100 percent, there are 33 GS–18's, or 14 percent of the total; 74 GS–17's, or 31 percent of the total; and 129 GS–16's, or 55 percent of the total.

The CHAIRMAN. I see Admiral Bennett, Chief of the Office of Naval Research, is here this morning.

I would like to ask him to comment upon the growing and urgent need for additional scientists, technicians and engineers in his branch of the service.

Admiral BENNETT. Mr. Chairman, a good deal of what I could say about it must of necessity be repetition, and, therefore, to save your time, sir; I will not repeat it.

I can only say that I have been engaged myself actively in many positions over the past nearly 15 years involving the recruitment of this type of personnel.

I think it has been well said here that this proposed legislation will tend to narrow the gap which we have to encounter with competitive industry.

I would like to touch again on motivation.

We recently, for instance, have recruited 1 or 2 people in the Department of the Navy for positions of this sort. One is a Public Law 313 position in my own office. This is a most important position since this man is head of the coordinating by the Department in the naval establishment.

I am sure that this man who has come to us well knows the job which must be done. He came because it is interesting and because he feels it is essential. He could command 4 or 5 times what we are paying him as a Public Law 313 employee. I would like in the further extension of these remarks to only emphasize everything that has been said on the question.

Mr. DOWDY. Mr. Chairman.

The CHAIRMAN. Mr. Dowdy.

Mr. DOWDY. I have something that has been in my mind for a long time.

Patriotism is what I am talking about and the professional interest in an undertaking that causes men to come in and work for less than private industry would pay.

Of course, the Government can never compete with private industry in paying salaries.

On checking these figures, and breaking them down, I notice that you have 157 people that will be in this scientific group, and you state that you already have 79 of them. So actually, it is only 78 people that you are looking for.

Certainly, there are that many patriotic scientists in the United States.

Mr. ROBERTSON. That is right.

Mr. DOWDY. A lot of people seem to talk about scientists lacking patriotism, but they are wrong. Now, breaking the figures down, it seems to take most of the new positions to fill the requirement for management people. Actually, you now have 157 that you consider as management and you want to add 128 to that, making a total of 285.

So that, really, you are lacking only 128 scientific people, at the present time.

Mr. ROBERTSON. That is right.

Mr. DOWDY. I thought I had the figure in my mind.

Mr. ROBERTSON. I think that is correct.

Mr. DUFLON. I would like to make a point, if I may, on this matter of pay and recruiting and retaining. One of the problems is the relative payment. For example, if we have one scientist who happened to come in 2 years ago and who happened also to come in at a time when a GS–16 was available, he is paid at that rate. We may have recruited in the interim a man whose background may be as good or better than the first man's, but because we do not have spaces for GS–16's he is automatically a GS–15.

I do not think it is so much a matter of whether they are paid as much as their counterpart in industry as this feature of relative payment within the Government.

Mr. MURRAY. What is the estimated cost of this legislation?

Mr. ROBERTSON. The estimated cost of this legislation is $2 million, which it is expected that we can absorb within the budgets that are now before the Congress.

Mr. MURRAY. Mr. Johansen.

Mr. JOHANSEN. While we have heard a great deal about competition of private enterprise, is it not true that those who are in the scientific field in private enterprise are by no means lost to the Defense program? The point I am leading up to is, does that not allow for a fuller utilization of private enterprise? That is, you buy the commodity where it exists because you are buying quality?

Mr. ROBERTSON. I think that is a very good observation. This is only a part of the whole problem. Virtually all the advance missile programs are done by contractors. In addition to that, there are a great many contracts with universities and technical schools, tapping their laboratories and their skills. M. I. T. and California Tech and a good many universities are contributing to this national effort, and every effort is being made by each service to draw on those sources in the most effective way. I believe it is being used pretty much to the hilt.

Mr. JOHANSEN. I wanted to be reassured, first, that we are not going to have to rely for our scientific and professional work primarily on Government personnel; and second, even if they get higher pay in private enterprise, there may be some patriotism in that branch too.

Mr. ROBERTSON. It is wonderful to see the patriotism of these men who are staying in these jobs in Government, and we want to be sure we reward them within proper limits.

Mr. JOHANSEN. But there is also patriotism in private industry.

Mr. ROBERTSON. Absolutely.

Mr. GUBSER. Mr. Chairman.

Mr. MURRAY. Mr. Gubser.

Mr. GUBSER. Mr. Robertson, first of all I want to compliment you on your statement and your answers to the questions that have been asked of you.

Mr. ROBERTSON. Thank you.

Mr. GUBSER. Is this piece of legislation a temporary answer to your problem or are you looking at this from a long-range point of view, 10 or 15 years from now? I can explain myself a little more fully. I am alarmed at the fact that you ignore the problem of recruiting at the lower levels, and I am wondering if this is not just a temporary stopgap solution if you get a few more GS–18's than you have today and serve a temporary need. It seems to me an esprit de corps should have people coming in at one end of the pipeline and developing themselves and going out at the other end of the pipeline. I am interested in one branch, which I will not name, but it is a branch of the National Advisory Committee for Aeronautics. Last year at Ames Laboratory they were able to recruit only 33 scientists in grades 5 to 7, and they were in the lower half of their classes. The reason was the disparity in entrance salaries between the Federal Government and private enterprise. Last year the highest salaries we could offer were $3,410 for a GS–5 and $4,205 for GS–7.

Are you not just giving us a temporary solution to this problem and do you not think you should consider the bottom end as well as the top end of this problem?

Mr. ROBERTSON. I think you have touched on the vital problem of career incentive. I believe that much of that—for instance the training incentive, the placement, the opportunity for career development—much of that we can do within present authorities and present moneys. It was that kind of thing we were studying with the Secretaries yesterday. Many of these courses of action were studied by those skilled in that field on the Hoover Commission, both the Dodge committee and the Reed committee. Some of these do require legislation and it was the view of these groups that a large part of your need is in the higher pay because you have the incentive of having a career to look forward to. Many of the people you speak

of I think would look with much better favor on a career in Government if they saw the goal at the top a little higher.

I am not able at the moment to speak to the point of the exact level in those lower grades, but I believe it is the feeling of those who have lived with it that the sum total of the legislation we are requesting now will give the foundation for a sound career system.

Mr. GUBSER. I do not want to argue with you, but I am afraid I will have to disagree, because I still think a youngster getting out of college who is offered a job with the United States Government at $3,410 and another job with Lockheed Aircraft, for example, at a starting salary of $4,400, invariably is going to take that $4,400 job and the United States will get what is left. I feel you are overlooking a very important point in a long-range solution of this thing by not looking at the whole problem of our scientific personnel from top to bottom.

Mr. DUFLON. I think you are right that it calls for a long-term plan and probably a planned input at the bottom. I think the National Security Agency is perhaps the best example where they somewhat have to take them at the bottom. They have to train their own people. Yet in this bill we are asking they be given 50 Public Law 313 positions. This is not because they do not have a continuing demand from the bottom up, but if the top is GS–15 they will lose many of their middle jobs.

In recruiting, against these industrial openings, if it can be pointed out that if you work out satisfactorily you will go up to the top, and the top is, say, $15,000, then I think it will help recruitment and it will keep in the agency all the people in the lower rungs.

Mr. MOSS. Will the gentleman yield?

Mr. GUBSER. Yes.

Mr. MOSS. I want to compliment my colleague on getting to what I think is the heart of this very important question, and that is the need for some proper inducement to bring in the young scientists, the young engineers, to the Government career service. Is it not true that we are going to have an increasing need for the professionally or technically trained person in Government?

Mr. ROBERTSON. I am sure of that.

Mr. MOSS. As I mentioned before, I have been devoting some time to studying ideas for a separate professional and technical scale which would recognize the peculiar problems we have in recruiting that type of person to Government service. Do you not think such a schedule carefully arrived at would be of considerable aid in recruiting the career type employee in this field?

Mr. ROBERTSON. I think it is a good question, and I must say I have not studied it just in those terms. I would think that a study along that line might open up means of facilitating it over the long pull. We are, generally speaking, meeting our recruitment needs in the lower levels.

Mr. MOSS. In quality?

Mr. ROBERTSON. Yes. I will ask Mr. Smith, Assistant Secretary of the Air Force, to comment on that.

Mr. SMITH. Of course we would like to have higher standards at all levels.

Mr. MOSS. Do you set the standards or does your competition do that?

Mr. SMITH. Our competition does. We naturally like to have as high standards as we can.

Mr. MOSS. You are either going to lower your standards or not recruit.

Mr. SMITH. That is a fair statement.

Mr. MOSS. And if you are recruiting, I think Mr. Gubser indicated that of the 33 recruited in the lower grades, none were in the top group of their class.

Mr. GUBSER. They were in the lower 50 percent.

Mr. SMITH. He was speaking of a specific instance.

Mr. GUBSER. I know of another instance

Mr. MOSS. Does that illustrate the general trend?

Mr. DUFLON. I think recent legislation that permits the hiring at a step higher than the lowest is helpful.

Mr. MOSS. I remember 5 or 6 years ago—and I believe my colleague from California was in the California Legislature with me at that time—we permitted the State Department of Highways to recruit 2 or 3 steps above the lowest.

Mr. DUFLON. I think that Public Law 313, with its flexibility in pay, is a step in the direction which you implied when you said there should be a separate scale, perhaps. I think it meets our immediate problem of having to hire people with good skills and background.

Mr. MOSS. Do we not have difficulty in that we do not give enough consideration to the peculiar problems of recruiting these professional people? That is why I feel there should be a separate professional and technical scale which would recognize the peculiar problems in recruiting that type of person to Government service.

Mr. DUFLON. I do not know how many other groups might fall in that category.

Mr. MOSS. At the moment it is in your scientific and professional fields primarily?

Mr. DUFLON. There is no doubt about that.

Mr. ROBERTSON. Mr. Chairman, I wonder if I might not make one comment in connection with Mr. Gubser's point?

Mr. MURRAY. Go ahead.

Mr. ROBERTSON. Perhaps where the Government is not getting these people, for instance if a man went to Lockheed, the Government would be getting the benefit of that man because there are some tremendously important missions in Lockheed and Boeing and other companies.

Mr. GUBSER. I would not for 1 minute want to deprive these very important private concerns of their scientific personnel, but I do not think you can let everybody play on the first team. You have to have a second and third team, and I hate to refer to the Federal Government as the second or third team, because it certainly is not, but today it is sadly overbalanced in favor of private industry. I agree with what you are after but I do not think you are going far enough. We should place these people in a separate category and make it attractive so that we will get people in the Federal service.

Mr. DOWDY. Will the gentleman yield?

Mr. GUBSER. Yes.

Mr. DOWDY. Is not the answer to it that we do not have enough people studying engineering and scientific fields to furnish the per-

sonnel, and that is probably the way it will have to be tackled now?

Mr. MURRAY. You find so few high school students studying science today.

Mr. DOWDY. They do not teach it in some high schools any more. I notice they do not teach Latin in some high schools today.

Mr. RHODES. I would like to ask this question: Mr. Robertson, do you feel there is a shortage in the scientific and engineering field to meet the needs of Government and private industry?

Mr. ROBERTSON. I think we have a problem and that the motivation of people getting out of high schools will have to lean more heavily to these fields.

Mr. RHODES. I was wondering what the Department of Defense is doing to meet that problem?

Mr. ROBERTSON. There are studies underway within the Government, in which Defense is participating, but that is a very long-range program and at the moment we have been addressing ourselves to the immediate problem. While the supply of engineers and scientists is tight, I believe they are moving from the less essential work to the more essential work. I have just been around to virtually all our major missile people, and they feel their recruiting rates are satisfactory. They are coming along very effectively in the key spots.

Mr. RHODES. While this is a long-range problem, is it not important that something be done immediately?

Mr. DUFLON. I think one of the advantages of this competition salarywise and otherwise is that it is attracting people to the field, in that almost anyone with a degree is practically assured of employment for his lifetime.

Mr. ALEXANDER. Will the gentleman yield?

Mr. RHODES. Yes.

Mr. ALEXANDER. Do you think in the long-range program in the scientific field it would be possible to have a program in which you would draw from the high schools and give people training in the scientific field somewhat similar to the training given in the military academies?

Mr. ROBERTSON. We are doing a certain amount of that within the military establishments, but I think that job is being well done by schools such as M. I. T. and California Tech.

Mr. ALEXANDER. They are doing a good job but we are not getting them in. Fundamentally you will be faced with this same situation 10 or 15 years from now.

Mr. ROBERTSON. I believe the numbers we need in Government can be met. We need to increase the flow and the decisions as men come into the colleges. I believe many of the universities are beginning to stimulate more students into taking the technical and scientific courses. I happened to run into the fact that Yale's program has been stepped up. I really believe it is better for the universities who are in that business to stress it. Of course the military services, their schools, will provide the specialized needs we have and more civilians will participate in these courses as needed, but I think fundamentally it should be dealt with at the university level.

Mr. Moss. If this highway program goes through, will that not have considerable impact? It will draw many engineers fresh out of school, will it not, through the expansion of the State highway departments?

Mr. ROBERTSON. I believe it will. The kind of people we need are for the most part very highly specialized in electronics and in propulsion physics and that sort of thing, and very high states of draftsmanship. The defense effort will have to make sure it is meeting its requirements on schedule through the various stimuli. I think the high level of our economy has a bearing on this whole problem. Industries like the telephone company and General Electric are giving top priority to our needs.

Mr. Moss. In order for you to use effectively the manpower of General Electric and the telephone company, you have to have in the Department of Defense capable men to make the programs?

Mr. ROBERTSON. That is right.

Mr. Moss. And you have to have men of equal caliber in the Government to negotiate contracts with the private companies.

Mr. ROBERTSON. That is right, and in our contract proceedings the men negotiating contracts are constantly——

Mr. Moss. Being courted every day?

Mr. ROBERTSON. Being courted every day.

Mr. GROSS. Speaking of the high level of the economy of the country, you would make one exception, would you not?

Mr. ROBERTSON. What is that?

Mr. GROSS. Agriculture. What language is there in the bill that specifically ties these new supergrades down to scientific people? I am referring to H. R. 9350.

Mr. DUFLON. H. R. 9350 is in 2 sections, the first amending the act of August 1, 1947, regarding scientific positions, and the second section amending the Classification Act.

Mr. GROSS. Do you not bring in scientific and professional personnel?

Mr. DUFLON. Yes, at the top of page 2.

Mr. GROSS. In other words, it could apply to professional personnel, and that could be management people?

Mr. DUFLON. I think the legislative history indicates the intended use in science and related professions. Our own interpretation has led to the use of engineers and we have 1 doctor serving in a Public Law 313 position.

Mr. GROSS. You are stating that under the terms of H. R. 9350 none of these places would go to anyone other than scientific personnel?

Mr. DUFLON. No; we are saying that to hold one of the positions which we would get from Public Law 313 the activity must be related to science. We have as a matter of fact in the past always had people holding those jobs who either were scientists or they were engineers or doctors. Whether it could be interpreted to include other categories we do not know.

Mr. GROSS. What do you think about it?

Mr. DUFLON. I think it should be restricted to a narrow sense of scientists, except I think when you get a scientist who has left the research laboratory and become an administrator I think this would be a proper application.

Mr. GROSS. Thank you.

Mr. MURRAY. H. R. 9350 amends Public Law 313, which defines the positions as "being established to effectuate those research and development functions, relating to the national defense, military and naval medicine, and any and all other activities of the Department of Defense and the National Security Agency, as the case may be, which

require the services of specially qualified scientific or professional personnel."

Mr. GROSS. I think that is open to a lot of latitude.

Mr. MURRAY. I do not put that type of interpretation on it myself.

Mr. Secretary, do you have any other representatives here who wish to be heard?

Mr. ROBERTSON. I think General Canine would like to be heard, but because of the nature of his work, the security aspects of it, might I respectfully suggest that that be done in closed session?

Mr. MURRAY. That would be proper, I think, if it is classified information.

Mr. ROBERTSON. Yes. That is the nature of his work.

Mr. MURRAY. Do you have anyone else?

Mr. DUFLON. There are other representatives here available to answer specific questions. I think they could all get up, service by service, and underline what Mr. Robertson has stated.

Mr. MURRAY. All of you agree that there is an urgent and crying need for these professional and scientific positions in research and development?

Mr. ROBERTSON. I would like each service to speak for themselves, but I know from having worked closely with them that I am speaking for them.

Mr. MURRAY. You think it is urgent and essential to our defense and to our research program in connection with defense?

Mr. ROBERTSON. We do, including the management end of it.

Mr. MURRAY. I do not know what you need. I am for the strongest national defense, and when you say it is essential and imperative I am ready to go along with it because I cannot question your judgment as to that. I am not trained along that line, and I must depend on the sound judgment of the representatives of our armed services.

Mr. ROBERTSON. I can say without hesitation that in my judgment and in the judgment of Mr. Wilson, who has also followed this and who would be at this hearing except that he was asked to be at another meeting this morning, that this is a matter of high urgency, and we think the proper balance has been carefully appraised between the services.

I would also urge any encouragement that you might give to the other matters of a personnel nature that may be before the Congress as a whole. We do feel that those are tremendously important to defense.

Mr. MURRAY. That completes the hearing with the exception of General Canine?

Mr. ROBERTSON. Yes, sir.

Mr. MURRAY. How long would it take to hear General Canine?

Mr. DUFLON. I think just a few moments. Mr. Moore might stay, and I will stay.

Mr. MURRAY. Before we get to that, let me ask the gentlemen who are here on H. R. 9405, relating to the National Advisory Committee for Aeronautics, how many of them are from out of town.

Dr. DRYDEN. None.

Mr. MURRAY. I would like to have this hearing on Thursday.

(Discussion off the record.)

Mr. MURRAY. We will hold hearings on H. R. 9405, relating to the National Advisory Committee for Aeronautics, on Thursday morning at 10 o'clock. Please come back at that time.

(Thereupon, at 12:30 p. m., the hearing was adjourned.)

SCIENTIFIC, PROFESSIONAL, AND ADMINISTRATIVE POSITIONS TO PROMOTE THE NATIONAL DEFENSE

THURSDAY, FEBRUARY 23, 1956

HOUSE OF REPRESENTATIVES,
COMMITTEE ON POST OFFICE AND CIVIL SERVICE,
Washington, D. C.

The committee met, pursuant to recess, at 10:15 a. m., in room 213, Old House Office Building, Hon. Tom Murray (chairman) presiding.

The CHAIRMAN. The committee will be in order.

The committee is considering this morning H. R. 9405, a bill which has the purpose of increasing the number of professional and scientific positions in the National Advisory Committee for Aeronautics from the present limitation of 10 to 60.

Public Law 167 of the 81st Congress, approved July 13, 1949, provides that the Chairman of the National Advisory Committee for Aeronautics is authorized to establish and fix the compensation in the headquarters and research stations of the National Advisory Committee for Aeronautics for not to exceed 10 positions in the professional and scientific service, each such position being established in order to enable the National Advisory Committee for Aeronautics to secure and retain the services of specially qualified personnel necessary to the discharge of the duty of the committee to supervise and direct the scientific study of the problems of flight with a view to their practical solution. Another section fixes the salary rate limitation for these positions at not less than $10,000 nor more than $15,000 per annum. The bill increases from 10 to 60 the number of these scientific and professional jobs in the research and development program of the National Advisory Committee for Aeronautics.

We have the representatives of the National Advisory Committee for Aeronautics, and we will hear first from Dr. Hugh L. Dryden, Director for the National Advisory Committee for Aeronautics.

STATEMENT OF DR. HUGH L. DRYDEN, DIRECTOR, NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS; ACCOMPANIED BY DR. JOHN F. VICTORY, EXECUTIVE SECRETARY; PAUL G. DEMBLING, LEGAL ADVISER; ROBERT J. LACKLEN, PERSONNEL OFFICER

Dr. DRYDEN. I am Hugh L. Dryden. Mr. Chairman, this is the first opportunity I have had to appear before the Post Office and Civil Service Committee. I believe it would be of value and interest to you to have me give you very briefly something about the National Advisory Committee for Aeronautics.

It is a unique agency in Government with a unique relation to the Defense Department and to national security.

The CHAIRMAN. I think that would be fine, if you will do so.

Dr. DRYDEN. If you think I am going too long, just shut me off, because this is a subject I could talk about all day.

The CHAIRMAN. All right, sir.

Dr. DRYDEN. We prepared sometime ago a chart which is a method of getting a very quick view of the NACA.

I think I should say just a word about the organization, first. The National Advisory Committee for Aeronautics consists, first, of an executive committee of 17 men appointed by the President. They are drawn as representatives of the military departments and from certain Government agencies, from private industry, and from educational institutions.

For example, the present committee is under the chairmanship of Dr. Jerome C. Hunsaker, of the Massachusetts Institute of Technology.

From the Department of Defense we have Dr. Furnas, who is the Assistant Secretary of Defense for Research and Development.

From the Air Force, General Twining and General Putt. General Putt was here at your meeting day before yesterday and was prepared to put on his other hat as a member of NACA to speak on our bill, if it seemed desirable.

From the Navy, Admiral Combs and Admiral Pfingstag.

This, then, gives the Defense representation on the committee, which manages and runs this agency.

From the civil side of aviation, Mr. Rothschild, Under Secretary for Transportation, is a member, and Hon. Joseph P. Adams, the Vice Chairman of the Civil Aeronautics Board.

Then, without reading all the names, the Director of the National Bureau of Standards, the Chief of the Weather Bureau, the Secretary of the Smithsonian Institution, representing other governmental scientific agencies.

From industry, Arthur Raymond, who is chief engineer for Douglas Aircraft Co.

Mr. Fred Crawford, of Thompson Products.

We have recently lost, unfortunately, Ralph Damon, who was president of TWA. That place on the committee at the moment is vacant.

Then from private life we have Dr. Bronk, the president of the National Academy of Sciences.

Mr. Preston Bassett, of the Sperry Rand Corp.

General Doolittle, of Shell Oil Co.

I believe I have covered 17 names

This Committee is appointed by the President and elects its chairman annually. The chairman appoints, in consultation with the executive committee, the three principal full-time officers; the Director; the executive secretary; and the Associate Director for Research.

I forgot to mention that the executive committee serves entirely without compensation. There are no fees of any kind, only their travel expenses to meetings are paid.

This Committee functions like a board of directors. It meets approximately every month and determines the policies under which the NACA operates.

The Committee also has a staff advisory organization which has been in existence from the time the NACA started in 1915. There are five principal subcommittees constituted in much the same way,

representatives from military, from civil aviation, from the aircraft industry, from the universities and private consultants, again with men serving without any pay or fees of any kind, only their travel expenses to meetings.

There is a committee on aerodynamics, 1 on powerplants for aircraft, 1 on aircraft construction, 1 on operating problems. These are the forums in which the technical problems in aeronautics are discussed. There is also an industry consulting committee for advice on NACA-industry relationships.

The men on these committees, I think, it is fair to say, know everything that is going on in the country in their specialty, whether it is done by the military, by universities, or by private industry. They are invaluable in keeping the effort of the NACA directed on those problems which are really the most acute.

Under these main committees there are a number of subcommittees which I will not go into. This is what you might call the staff side, policy determining, the place where priorities are fixed, where the technical policies are determined.

The other side, of course, is the operating staff. The name "Committee" is somewhat of a misnomer. You may think merely of these people meeting around the table and talking, this is not so. Now I want to give you some idea of the physical plant and magnitude of the research operations of the NACA.

Some of your members have visited one or more of our research stations. We have a physical plant which cost something over $300 million and which consists principally of very specialized equipment.

One of the principal locations is on Langley Field, Va.; on part of the Air Force station and on land adjoining, which was purchased for our laboratory.

This is the oldest station of the NACA, the only one up until the beginning of World War II, or around 1939 or 1940.

This laboratory (the chart refers to fiscal 1956) has 3,251 employees. Its plant value is $104 million. Its operating budget is $22½ million. It operates in the field of aerodynamics, hydrodynamics, aircraft structures, and flight testing.

At the beginning of the war, decisions were made to greatly expand the activities of the NACA by a new station, the Ames Laboratory, in California. This was originally established for two reasons:

One, to be closer to some of the aircraft industry on the west coast, but mainly from the point of view of dispersal, of not having all our equipment in one place.

The availability of power is another question that is always involved in the location of such laboratories.

Mr. GUBSER. Plus the fact it is the garden spot of the world, too.

Dr. DRYDEN. Yes.

There are 1,500 employees at the Ames Laboratory, with plant value of $76 million with a budget a little under $12 million a year.

The Ames Laboratory deals primarily with high-speed aerodynamics.

About the same time there was established a laboratory devoted solely to problems of propulsion. I may remind you that this was the time that the jet engine made its appearance on the scene.

This laboratory was very quickly converted to work entirely on research problems on advanced engines; all work on reciprocating engines was stopped since this engine was in a high state of development, and the effort was placed on the things to come.

This laboratory, which is located on the Cleveland Airport, just across from the passenger terminal, has about 2,800 employees, plant value $106 million; budget of about $20½ million per year.

Up until the last couple of years this was the only place in the world where a jet engine could be operated on the ground under the conditions which it would experience in flight at very high altitude.

The Lewis Flight Propulsion Laboratory, as it is called, has been a very powerful influence in the development and advancement of the jet engine.

I will speak a little more about that later.

Now, these are the three principal stations. Beginning in 1944 the NACA, together with the Air Force and Navy, pioneered a new tool of investigation, the so-called research airplane that many of you have read about. The first one was the Bell X–1 airplane which first flew at the speed of sound in 1947.

This was a wholly cooperative enterprise. The idea was to build an airplane whose sole purpose was to gather information at speeds and altitudes which could not be attained by useful service aircraft.

In other words, the pay load is the pilot and a few hundred pounds of instruments. The powerplant was a rocket powerplant with a very high rate of consumption of fuel, but powerful enough to drive this airframe very fast.

To fly such high-speed airplanes, we use a natural facility which used to be called Muroc, now Edwards, Calif., a very large, flat, dry lake.

The NACA has a group of 300 people there, a plant of $19 million, and a budget of about $2 million a year.

The research airplanes are usually first flown by company and military service pilots to rapidly explore the range of operation. They are then turned over to us for the job of making systematic performance measurements, obtaining data which will assist designers in designing new military aircraft.

All I need to tell you is that now, this year, 8 years after the speed of sound was first passed, we are equipping our fighting Air Force with supersonic airplanes, tactical supersonic airplanes.

We have another smaller operation, about 80 people, on the Atlantic coast, a place called Wallops Island, Va. It is just below Chincoteague, Va., that part of Virginia across Chesapeake Bay. We use the technique of rocket-propelled models to make aerodynamic measurements, and nearly every airplane and missile which you read about has had work done on it at that station. This station is operated as a field station of the Langley Laboratory.

This, very briefly, is the plant.

We have talked about stations. Another way of breaking them down is shown on the chart: 22 supersonic wind tunnels, 8 transonic wind tunnels—a transonic wind tunnel is a relatively new device for making measurements at and close to the speed of sound.

The ordinary wind tunnel is not able to make such measurements because of a phenomenon known as choking. Scientists of our organization have developed a wind tunnel which can operate at the speed of sound without choking.

For that, one of our research scientists received the Collier Trophy.

I might digress and say that in the past 25 years, the Collier Trophy has been awarded 5 times to people connected with the National

Advisory Committee for Aeronautics. The first one was for the engine cowling which you see on every reciprocating engine transport, which made possible tremendous improvements in the economy of operation.

The second was the thermal method of de-icing aircraft wings.

The third, I believe, was a joint award on the X–1 research airplane for first accomplishing supersonic flight.

The fourth award was for the transonic wind-tunnel concept.

The fifth one, this year, was again for a development which made possible great improvements in the performance of military aircraft.

In fact, General Putt has testified before other congressional committees that this actually saved the investment made in the project which you know as the F–102 airplane. This airplane was designed on the basis of the best information available. It turned out that it probably could not reach supersonic speed.

Quite accidentally and unconnected with this military airplane, one of our scientists in studying airflow about supersonic configurations arrived at a principle and idea which permits the designer to greatly reduce the drag of airplanes in this region.

As a result, with the same engine, the second prototype of this airplane flew at speeds more than 100 miles an hour faster than the original version and made it a supersonic airplane. The exact performance, of course, is classified.

So, to continue, there are 14 supersonic tunnels. The term "supersonic" simply means greater than the speed of sound; "transonic" around the speed of sound, or through the speed of sound; "subsonic," below the speed of sound.

All these airplanes still have to land, and if they land, they land at slow speeds.

It is unfortunately true that the configurations that give you the best performance at supersonic speeds have poor performance at subsonic speeds, so that the landing performance of supersonic airplane configurations is still a problem requiring considerable research effort.

We have four altitude tanks. These are the facilities of which I spoke in which any of our jet engines can be operated on the ground, under conditions which they will encounter in flight.

We have some 260 specialized research facilities. These are rather extensive setups. I think this photograph shows a compressor test rig at the Lewis Laboratory.

There are quite a number and they are very varied. There are 4 flight research facilities including the 1 at Edwards where the research airplanes are flown.

Here is a model with its booster at the station at Wallops Island.

Now, what do we do with all this plant? What do we produce?

I want to make it very clear that we do not design airplanes. We do not review the design of airplanes, or tell either industry or the military services what they ought to do or in detail how to make the design compromises.

Our product is information. In particular it is the information looking further ahead than any industrial research group can afford to look.

We are after the succeeding generation of aircraft, to advance aeronautical technology, as a modern statement of our mission.

I think it is fair to say, and you will find general agreement in industry that our propulsion laboratory has demonstrated things to come in the propulsion field and these ideas are being applied by the industry designers.

Our Lewis Laboratory was the first to work out the problems of the practical use of afterburners, which are the powerplants which have made possible supersonic speeds.

Our laboratory has pioneered in work on cooling of turbine blades, to get higher performance.

The type of compressor which has been developed at the Lewis Flight Propulsion Laboratory is just now going into our next generation of engines to make possible more thrust for the same size of powerplant.

Our job is as far as we can to be out in the future.

In the aerodynamic field—this perhaps may be regarded as claiming a little too much territory—but the Congress supplied us a few years ago with what we then called, and still call, a gas dynamics laboratory. It comprised facilities to stress the problems which we knew would be encountered with higher speeds and altitudes.

The problem of aerodynamic heating is one of the very difficult problems of the intercontinental ballistics missile, along with the problems of aerodynamic performance at very high speeds. I think it is a reasonably fair statement that again up until recently, at least, the information available for use in the engineering design of the warheads of these missiles came, very largely, from the work done by NACA.

One of our men received another award this year, the Reed Award of the Institute of the Aeronautical Sciences, primarily for the work which he did on this problem of the optimum design of the warhead of ballistic missiles.

Our product, then, is information.

Now, one way it is made available is through this kind of document, a research memorandum or report.

Most of them, I would say, are classified documents.

This is an unclassified document dealing with the flying platform that you saw pictures of, undoubtedly, in the popular magazines. The original work, in fact, this idea, came from Mr. Zimmerman, who is now a member of our staff. This document describes the preliminary experiments which were made by NACA on this business of standing on a platform controlled only by the natural reactions of the human body.

This work was taken up by the Office of Naval Research and by the Army. We don't attempt to judge whether this is going to be really a great weapon. This is something for the services to decide.

Here is again a case where we have explored the ideas and provided the technical information.

A report nowadays is perhaps the least effective way of conveying information. People are deluged with volumes of documents. The more effective way, one which we have used a great deal, is that of a technical conference of the designers of the industry, a closed session in which we present the latest results and the latest thinking. Men review the information available in various fields.

We normally have 2 or 3 of these technical conferences a year which are so useful and so popular a way of keeping in touch with the

latest technical thinking. Our embarrassment is the growing size of the crowds.

Now, perhaps more important are the smaller project consultations, either with the engineers of industry, or with the military.

I might say that we do not work for industry. We carry out our operation or assistance on specific aircraft or missiles at the request of the military department concerned.

But, generally, our position is something like this: When there is a competition we are told about it by the military services. We have often collected and issued information which we thought was pertinent to this competition on an expedited basis. We have accelerated certain tests which might have a bearing on this, and distributed it to all those engaged in the competition.

Then when the military has selected a contractor, we are called upon to work with that contractor to make that airplane the best possible airplane, to incorporate in it all of the latest knowledge.

This is done by people from the aircraft company coming and sitting around the table and discussing individual technical problems with NACA scientists and engineers.

There are also consultations with the military. There are several types.

We occasionally seek such consultation and inform them of new developments which we think might have some possible application.

More often, they call upon us and especially when there are difficulties with a current design our experts are called in. We have no responsibility for the investigation of accidents, but usually our experts are called to sit with their boards to advise on technical features.

Well there are these various ways of getting the information to the people who need it. Now, let us look at the people who use the information. I have so far talked almost entirely of military matters. This is not an accurate representation of the scope of our responsibility. The users are the Air Force, the Navy, the Army, the aircraft industry, the engine industry, the air transport industry, private flying and universities.

For example, as this classified information becomes declassified after a period of years, the universities need this in their teaching.

We have held two conferences for universities, university professors, in which the information which has been recently declassified, has been presented to them in the form that could be incorporated in their teaching.

The result of all of this, of course, is a contribution to airpower. We are at the bottom of the pyramid, the foundation, the research knowledge, but our work can be recognized by those who know about it in the final product.

We have simply put here an Air Force airplane, a Navy airplane, the missile, the vertical riser airplane, and here are two investigations dealing with the safety aspects of commercial and private flying.

You will recall that one of our subcommittees deals with operating problems. The principal operating problems that we have worked on—this is not a catalog of all of them—are atmospheric gusts and the gust loads on airplanes, what you can do about it in the way of operating the airplane.

Some studies have made of influence of other natural elements on aircraft such as icing. Others deal with the problem of safety with respect to crashes and fire.

We are doing a lot of work at the present time on the subject of aircraft noise, which is of concern, of course, to everyone. These are some of the fields:

We are doing some work in the field of engine reliability. These pictures on the chart relate to studies of actual crashes of obsolete airplanes, surplus airplanes, which were carefully instrumented to determine the origin of fires following crashes. I think many of you know there are quite a number of cases of accidents in which the crash is not severe enough to really hurt the persons inside, but there is a sudden fire and everybody burns up.

The question is: What can be done about that?

We started this project with some misgivings; it seems to be a very difficult job. We put some very good people with a good background in physics, and instrumentation and chemistry on this job. As a result of their observations they were able to identify what started fires, what the possible mechanisms were, how the fires spread throughout the airplane, and from that what you can do to prevent fire.

The result is a protective system; we simply explored the principles. We demonstrated that you could crash airplanes without having a fire; that if you did not do certain things you would have a fire.

This information was turned over to the military and industry. As a result, a commercial company is building a protective system, and if we are correctly informed, such a system will be probably put on the new jet transports that are built in this country.

We made a few crashes of privately owned type aircraft in cooperation with the safety people, really to put some numbers on the design parameters for such airplanes.

I have spent a very long time on this. I think I might make one other general remark.

Our primary mission, as I have said, is to advance technology, to stay out as far in front as we can, to try to foresee the direction in which things are moving, and to turn out effort in that direction. We are helped in that very greatly by the discussion that goes on in the subcommittees in which all the interests are represented. These subcommittees are very powerful in the sense that we listen to what they say; we can learn from that discussion even though everybody does not agree 100 percent what the problems are likely to be.

We have established a relationship with industry so that designers will tell us what they are thinking about, their so-called proprietary information, and we have built up a reputation of not leaking from one company to another.

The information is used to guide our efforts in the direction in which design is moving. We don't want to do research in a laboratory which goes into a report which is filed in the library. We want the research that we do to have a bearing on the advancement of aeronautics in the form of the airplanes and the missiles that are being built in this country.

About 10 or 15 percent of our work is aid to Air Force and Navy on specific designs. I think nearly every development engine has been though the altitude tank which I mentioned before.

We have had some responsibility, some part in nearly every aircraft and missile project.

I would not like you to get the idea at all that we do all the work that is connected with these projects. An airplane company has many thousands of hours of wind-tunnel time in its own facilities and in joint facilities like the cooperative wind tunnels. The project gets to us when the design is committed very completely.

And, usually, only for certain types of questions.

At the other end of the scale, about 10 percent, or 15 percent, is in what you might call the more remote future. When we built this gas dynamics laboratory any practical engineer that you talked to would have said that the talk of intercontinental missiles was just talk; there was no sound basis for designing them. They looked a bit visionary, so to speak. They were further into the future than his current interests.

The great majority of our work in between is in applied research, in advancing technology.

I would like to give you one illustration. A jet engine uses great amounts of air which must be taken in through some kind of inlet. From the point of view of an aerodynamics man, the nose is the place for the inlet, like the F–86 airplane which you have seen with a big hole in the front end. That is the best place to put it, because so far as the inlet is concerned, this location gives you optimum performance.

However, the man who flies a military craft wants something more than a vehicle that can fly. There are other candidates for the nose position nowadays—a radar or gun. There are other things for which a nose position would be the most satisfactory location.

So the inlet may have to go somewhere else, as it has on many other airplanes. It may go in the leading edge of the wing, or on the side of the fuselage.

What the designers expect from us and what we try to do is to investigate the performance of the inlet broadly, at various locations, and to give him the numbers to say what performance penalty he will pay on the inlet itself if he locates it in some other position.

This enables him to make an intelligent compromise on all the requirements of the specific design.

To take another one, I mentioned the cowling on transport airplanes, this device right here [pointing to the chart] on the engine.

Another related research was where to put the engine and propeller. Should you put it real close to the front edge of the wing, far out in front, above the wing, or below the wing?

In the early days of the committee a great deal of time was spent on determining the optimum location. This is what we mean by the applied research that forms the great bulk of our activity.

In engines at the present time, we design and apply ideas to advanced components and get the numbers so that the designer may have that information.

Of course, the field is so great (7,000 people can do a lot of work) that I could not tell you all about it if I took several days, but I have tried to give you a little concept of where we fit into the picture as an independent agency set up with great vision in the early days of aeronautics.

I am doing a lot of boasting about the work of NACA. I should say to you that I have been with NACA only 8 years, so I think I am entitled to boast about what they did before I came.

The CHAIRMAN. How long were you the Director with this Committee?

Dr. DRYDEN. Eight years.

I was Associate Director of the National Bureau of Standards when I came in with NACA. I spent 29 years at the National Bureau of Standards before joining NACA.

The CHAIRMAN. You came in as Director of NACA?

Dr. DRYDEN. Yes.

One way of judging an organization is to see what other people think of it. I will read you three quotes. If General Putt were here he would testify himself, but in testifying before one of the other committees, he said:

> The Air Force considers the work of the NACA as the very foundation of our own development programs for superior weapons in the international race for technological superiority. We are dependent on them for our fundamental and basic knowledge. When I say "we," I mean the Air Force and industry. And the rate at which they are able to proceed with their basic and fundamental research really determines the rate of development of our basic combat weapons. If they are slow, we have to slow up. So their rate is very vital to us in our development program for superior weapons.

If we may jump across the sea to England, in the London Daily Telegraph and Morning Post of September 12, 1955, Sir Roy Fedden, who has been to this country recently, had this to say about the NACA:

> At the end of World War II production of American service aircraft was greatly superior to that of any other country. Since then astonishing technical and production advances have been made putting America in an extremely strong position. In recognizing these achievements due honor must be given to the National Advisory Committee for Aeronautics, which directs research policy. Its members are unpaid, but to serve on it is regarded as a great honor. Its conclusions are put to the test of three large laboratories and high speed flight stations in the desert. The NACA is one of the finest and most selfless bodies in existence in its own particular sphere. Its staff looks upon it as a vocation from which nothing will persuade them to withdraw.

That last statement is a little bit too strong, as I will testify in a moment.

Sir Roy Fedden went on to criticize rather severely the state of aeronautics in England and particularly the lack of the kinds of facilities we have in this country.

Finally, a quotation from Congressman Carl Vinson, who heads the committee which hears us on our legislative matters:

> There is not a military or commercial plane flying today in this country which does not reflect in some way the research of the NACA.

Now, I think I may get down to the bill that is before you

Dr. VICTORY. May I say a word?

Mr. Chairman, I am John F. Victory, Executive Secretary of the NACA. It has been my unique privilege to have served throughout the history of the NACA. I was its first employee 41 years ago. I want to emphasize this. I think the Congress has a right to take pride in the fact that there is a remarkable degree of team work in aeronautics between science, military, and industry. It is extremely gratifying to all patriots that we have that degree of teamwork.

It is unexcelled in any other branch of government work which has a bearing on national defense.

In aeronautics it reaches its highest point. The NACA has been a prime factor in bringing about the sensible coordination of work.

Now, one of our real motives is to anticipate the research needs of aviation in timely amount and present to the Congress in advance of the development of the actual need the needs for new and modern and far-sighted research facilities.

And the Congress, in its wisdom, has had trust in us and they have never turned us down. We have always been able to provide facilities; we think in advance of any other nation, and that factor, that teamwork that exists not only between scientists and military, and industry, but also between us and the Congress has been a most important factor in the remarkable progress of American aviation, and is the very foundation of American supremacy in the air and the basis of its hope to retain such supremacy.

Dr. DRYDEN. Mr. Chairman, I think I said we could go on and talk about NACA and its work for a long time, but I think we might get down to the presentation on the bill that is before you and then questions of any kind.

Mr. GROSS. I wonder if I might ask a question at this point?

The CHAIRMAN. Yes.

Mr. GROSS. I am not too clear as to your relationship with the various laboratories and stations set up on this chart.

Do you supervise the running of these laboratories?

Dr. DRYDEN. Yes.

Mr. GROSS. Exclusively?

Dr. DRYDEN. Yes.

Dr. VICTORY. A typical American business corporation is headed by a board of directors. Our main committee comprises in effect a board of directors. The board of directors of an ordinary corporation elects the president.

Dr. Dryden, our Director, is in effect the president, the single head of the operating end of the NACA.

We are not a multiheaded organization. We have a single director.

Dr. DRYDEN. The headquarters is here in Washington, at 1512 H Street, and we have about 160 headquarters employees.

We have here in Washington only those people who deal with budget, with Civil Service Commission on policy matters with the other agencies of government, and a group of technical people who essentially do two things: Serve as the secretaries of the subcommittees, and also as contact people with the other military agencies on technical matters. They also aid me in coordinating the work internally.

Mr. GROSS. In other words, Congress appropriates the money and has built these laboratories and plants and has turned the complete administration of them over to the National Advisory Committee for Aeronautics?

Dr. DRYDEN. That is correct. It is an independent agency in the same sense as the Atomic Energy Commission or any other of the numerous independent agencies.

The CHAIRMAN. You were started by Congress as an independent agency back in 1915?

Dr. DRYDEN. Yes.

The CHAIRMAN. How long have you had the laboratories or stations in operation?

Dr. DRYDEN. The Langley station was built about 1917 or 1918.

Dr. VICTORY. The Ames Laboratory was authorized in 1939. The Lewis Flight Propulsion Laboratory was authorized by Congress in 1940, and the high speed flight research station in the desert was started gradually and then later was authorized by Congress as a major station.

The CHAIRMAN. And this pilotless aircraft station?

Dr. VICTORY. That came about during World War II. It is located on Wallops Island, Va., immediatley south of Chincoteague. That is the station where the NACA conducts basic research on stability and control of guided missiles.

We needed an isolated spot to do it. That was occupied by no human beings at all, backed by a swamp, fronted by the Atlantic Ocean.

Dr. DRYDEN. This is a field station operation reporting to the management of the Langley Laboratory. We do not maintain a full set of engineers and shops and all the accessories there. It is a field station to which our engineers go. It has a maintenance group which live there, but the technical management, the construction of models, the production of data, are all handled at Langley.

Mr. GROSS. Are military personnel stationed there?

Dr. DRYDEN. Our personnel is entirely civil-service personnel. About half of them are the wage board, or so-called blue collar; the others are in the classified civil service.

If I might come now to the bill, I would like to file this statement as it is.

The CHAIRMAN. Without objection, the statement will be filed.

(The statement referred to is as follows:)

STATEMENT BY DR. HUGH L. DRYDEN, DIRECTOR, NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS, ON H. R. 9405 BEFORE HOUSE OF REPRESENTATIVES COMMITTEE ON POST OFFICE AND CIVIL SERVICE, FEBRUARY 21, 1956

H. R. 9405 increases from 10 to 60 the number of positions authorized for the National Advisory Committee for Aeronautics which are excepted from the Classification Act.

The National Advisory Committee for Aeronautics has the primary responsibility within the Federal Government for the performance of fundamental research in the field of aeronautics. The military services and the aircraft industry depend upon NACA to provide the basic research data and criteria underlying new developments in aircraft and guided missiles.

The NACA was established by the Congress in 1915 to supervise and direct the scientific study of the problems of flight with a view to their practical solution and to direct and conduct research and experiment in aeronautics in its laboratories. Organized like a modern private industrial organization, NACA has a 17-member committee which operates like a board of directors. These men are appointed by the President, and serve without compensation. They establish policies and approve the research programs to be conducted. The 7,800 scientists, engineers, and supporting personnel who make up the staff of the NACA are headed by a full-time Director, and all are civil-service employees.

Today, NACA operates 3 principal research centers and 2 research stations: the Langley Aeronautical Laboratory in Virginia, where research is conducted on aerodynamic, structural, hydrodynamic, and related problems; the Ames Aeronautical Laboratory in California, which concentrates on high-speed aerodynamic research; the Lewis Flight Propulsion Laboratory in Ohio, which is concerned primarily with aircraft propulsion research; the High-Speed Flight Station in California, where specially designed, specially instrumented research aircraft are used in full-scale flight research on transonic and supersonic problems; and

the Pilotless Aircraft Research Station at Wallops Island, off the Virginia coast, where aerodynamic problems in transonic and supersonic speed ranges are studied, using rocket-powered models in free flight. In addition, the Congress in 1955 authorized the construction by NACA of a nuclear research facility for the study of aeronautical propulsion problems utilizing atomic power. This latter facility is under construction near Sandusky, Ohio.

During the 41 years since its organization as an independent Federal agency, the NACA has developed a civil-service organization of unsurpassed technical competence.

In 1949, your committee approved an amendment to Public Law 313, 80th Congress, which authorized 10 excepted positions for the NACA. These positions have been used by NACA for certain of its outstanding scientists. These men have worldwide recognition as authorities in their particular fields. The authority granted NACA under that amendment was of material aid.

We are now requesting, with the approval of the Bureau of the Budget and the Civil Service Commission, an increase in the number of such excepted positions from 10 to 60.

The occasion for this request arises from the intensified effort being placed on aeronautical research due to the necessities of national defense and international conditions, and the necessity for maintaining American qualitative leadership in aircraft and missiles. This requires a strong NACA adequately manned with scientists who have the ability to do creative, basic, long-range research. The complexity urgency, and intensity of the research effort have increased manyfold since 1949 when the existing group of 10 positions was authorized.

We feel that we are now at the crossroads with respect to keeping our top scientists. The large scale increase in expenditures for research and development in industry has created a great demand by outside organizations for our personnel. I am proud to say that until recently we have been remarkably successful in keeping our scientists in spite of the opportunities on the outside.

The situation, however, seems to be changing rapidly. In the first 6 months of fiscal 1956 our scientific turnover rate has increased by 27 percent over fiscal year 1955. But of far greater significance is the fact that for the first time in our history scientists of the top rank are leaving for more pay. In the last year, for example, we have lost our top scientists in aircraft fuels, aeroelasticity, aerodynamic heating of structures, pilotless aircraft instruments, solid state physics, and reactor technology, our top high speed scientist test pilot, and one of our brilliant scientists in the field of high speed aerodynamic stability and control.

Many of our top scientists are now on the fence. Outside offers are so far outstripping their Government salaries they feel that perhaps they owe it to their families to leave the Government service. The relief that this bill offers will have a beneficial effect in helping NACA to keep its scientific staff. We cannot hope to match industry in salary scales. However, Government salaries should be at least high enough so that the financial penalty of working for the Government is not too great.

We have a remarkabe research organization in the NACA with many of our personnel known as the leaders in their fields. I think we can keep it that way if we can obtain some relief at the top with the resultant greater incentive for the younger scientists who also must make the choice whether to stay with the Government as a career.

Favorable action on this bill at the earliest possible date will serve to check, and we trust to reverse the present trend. It will also be a real contribution to the national security in a most vital field.

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The authority granted NACA under that amendment was of material value.

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The complexity, urgency, and intensity of the research effort have increased manyfold since 1949 when the existing group of 10 positions was authorized.

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The bill before you deals with what I would term an emergency type of situation, an interim situation that does not pretend to solve all of our personnel problems.

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Now, the situation, however, seems to be changing rapidly. In the first 6 months of fiscal 1956, our scientific turnover rate has increased by 27 percent as compared with fiscal year 1955.

Now, 27 percent is not the turnover rate. The turnover rate has been really quite low, 8.9 percent per year. It has, however, for the first 6 months increased to an annual rate of 11.2.

Mr. REES. In what area?

Dr. DRYDEN. The scientific turnover.

Mr. REES. That is just scientific?

Dr. DRYDEN. Yes.

The CHAIRMAN. These 10 positions were created in 1949?

Dr. DRYDEN. There has been no turnover in those 10 positions.

But of far greater significance is the fact that for the first time in our history, scientists of the top rank are leaving for more pay.

In the last year, for example, we have lost top scientists in aircraft fuels, aeroelasticity, aerodynamic heating of structures, pilotless aircraft instruments, solid state physics and reactor technology, our top high speed scientist test pilot, and one of our brilliant scientists in the field of high speed aerodynamic stability and control.

We almost had no turnover in GS–15 positions in past years. We have lost seven top research GS–15's in the last year. Our people have generally stayed with us in the past. We are not worried about differentials of 25 percent. There is no man working on the NACA who would leave his work for 25 percent more pay. Pay is not the primary consideration, but is a consideration.

Mr. GUBSER. Is that apt to snowball?

Dr. DRYDEN. That is what worries us. It is more than the loss of one man. We have built up teams. Take the Lewis Laboratory. In 10 years we have built up teams of people who have learned to work together, who have become much more efficient. We have three times the plant, roughly the same number of people.

We turn out three times as many reports. This is because we have built up research teams.

When you pull a man out of the team there are two dangers, one that he goes with some company and begins to recruit the people in his group whom he knows very well so that we lose a group instead of one man.

Of course, the other danger is that he has broken up that group, we have to get a new leader; we have to develop the same sense of efficiency, and this may take a considerable time.

The thing that worries us is that key people are beginning to leave. Any of our top people get many offers at one and a half times their present salary; many get offers of twice the present salary, and many have left.

We have case histories. I will mention, for example, this solid state physics and reactor technology man. He was paid $11,300 with us. He went to a company which I won't identify, at $15,000; stayed there a short while and left for another company at $21,000. So he has gone since May 1955 from $11,300 to $21,000.

Now, that is an exceptional case. Here is the chief of one of our supersonic wind tunnel sections, an expert on stability and control, who was paid $12,150 with us. He went to an aircraft company as chief of their research for $16,000, plus $2,500 bonus.

This is the thing which begins to worry us, the possible snowballing of this.

As I say, we can hold people against a moderate differential.

The advantages of working with the committee on an interesting topic with the most magnificent equipment in the world surrounded by very good people are great. Most of our people count them as worth money to them and they don't leave very lightly.

We do not suggest that this bill will solve all of our problems. It will demonstrate that we are seeking and the Congress is seeking to do something about it.

What we are talking about are 50 positions, the average pay of the people who will be considered for them is $12,000; the new average rate would be $14,000.

So it amounts to on the average $2,000 increase for 50 people, or cost to the Government of $100,000.

That is what the cost of the bill before you amounts to.

Mr. GROSS. Mr. Chairman, may I ask a question?

The CHAIRMAN. Mr. Gross.

Mr. GROSS. How do you expect to compete with the aircraft industry that is producing for the military on cost-plus-fixed-fee contracts? What is going to happen here if we give you these 60 supergrades, 50 additional to what you already have?

Will not the aircraft industry simply come back to the Government and say "We have to have more money on our cost-plus contracts to pay higher salaries to these people"?

What is the end of this thing?

Dr. DRYDEN. You are stating a general problem that was discussed at the hearing before you the other day which certainly deserves the best wisdom of your committee.

Now, I do not have a solution. As you say, the Government is putting the same money into a company whose business is largely with the Government, but which is not subject to Government pay scales.

Mr. GROSS. Ninety-nine percent plus.

Dr. DRYDEN. We are doing a job operating under the Civil Service, we want to stay under the Civil Service. It has very many advantages to be a civil service organization. We don't ask to be put ahead of the salary spiral or even in the middle of it. We would like to be within sight of the tail end of the industry salary scale.

We would like to be close enough at least to be able to hold our best people.

Now, whether a man goes to an industry or university, or to NACA is ultimately a matter of his general makeup and philosophy. If he wants to make a fortune, he will not work for the university or for the Government.

If he values independence of thought, the ability to make his technical decisions without considering how this is going to affect whether his company gets a government contract, or not, this is worth something to people. Some people have the temperament that they would rather stay and work with the Government because of such intangible advantages.

Another point is, and we point this out to our people in an endeavor to persuade them to stay, a man who is working for the NACA is able to influence and get his knowledge applied across the board, no matter who gets the contracts.

If he works for company A, and company A does not get the contract, he is out of that project. If he is with us he will continue his work with the interesting project.

We don't ask to be put on a level with industry; we are dealing with a situation in an attempt to hold some of our top people.

Mr. GROSS. Now, Doctor, the Civil Aeronautics Administration and CAB have technicians and scientists, particularly technicians.

Dr. DRYDEN. I think you will find that the creative type of research and scientific work that we do is not to be found in the CAA. We require a different type of man than the CAA.

Mr. GROSS. Up to this point you have not drawn any people from the CAA or CAB? Are you saying that you have no people from those agencies?

Dr. DRYDEN. Very few.

Mr. GROSS. You have 8,000 employees. Of course, if you get a total of 60 supergrades in point of numbers I think you will have the greatest number of supergrades of any agency in the Government in relation to the number employed.

Dr. DRYDEN. We are wholly a research organization. If you relate the numbers to the number of research people in NACA with corresponding ratios for the Army, Air Force, and Navy, I do not think you will find a great discrepancy.

Mr. GROSS. Speaking in terms of numbers, I think with 60 supergrades you would probably have the greatest percentage of supergrades in the Government today. I might be wrong.

Dr. DRYDEN. Not of research people.

Mr. GROSS. If they do have technical people over in CAB who are qualified to do work with you, it seems to me that what we will be faced with then is the CAA coming in here and asking for a batch of supergrades—the CAA and CAB. I do not know where this thing is going to end.

THE CHAIRMAN. How many supergrades do you have at the present time?

Dr. DRYDEN. Twenty-eight supergrades.

The CHAIRMAN. And 10 scientific?

Dr. DRYDEN. Yes. Thirty-eight above the GS–15.

Mr. LESINSKI. In other words, we should not consider the proportion, but the nature of the work?

Dr. DRYDEN. The nature of the work we think is an essential element.

Mr. LESINSKI. This is a case where bigness can become too big.

Boeing Aircraft does 96 percent of the work for the Federal Government. Their contracts are cost-plus. On top of that they have been giving their executives bonuses from this cost-plus.

I happen to know of people who work there. They have a large number of engineers and people who do blueprinting and so forth that have nothing to do but ride escalators up and down at the expense of the Federal Government.

Lack of competition in the aircraft industry has caused that, where we in Federal agencies generally have control of the work you do. In this particular case we do not because of 1 aircraft corporation producing 96 percent of the work for the Federal Government.

The CHAIRMAN. You may proceed, Dr. Dryden.

Dr. DRYDEN. Many of our top scientists are now on the fence. Outside offers are so far outstripping the Government salaries they feel that perhaps they owe it to their families to have the Government service.

The relief that this bill offers will have a beneficial effect in helping NACA to keep its scientific staff. We cannot hope to match industry in salary scales.

However, Government salaries should be at least high enough so that the financial penalty of working for the Government is not too great.

I sat in a meeting the other day of some aircraft people who mentioned that the practice now in recruiting is to make the offers to the wife rather than to the man. This sometimes is very effective.

We have a remarkable research organization in NACA with many of our personnel known as the leaders in their fields. I think we can keep it that way if we can obtain some relief at the top with the resultant greater incentive for the younger scientists who also must make the choice whether to stay with the Government as a career.

Favorable action on this bill at the earliest possible date will serve to check, and we trust to reverse, the present trend. It will also be a real contribution to the national security in a most vital field.

I think you will get a greater return for $100,000 by passing this bill than any other investment of $100,000 that I can think of.

The CHAIRMAN. You do continuous research in the use of atomic energy or nuclear power for aircraft propulsion, do you not?

Dr. DRYDEN. A nuclear facility was authorized by the Congress last year, and is now designed and under discussion with AEC as to safety aspects.

We have for a number of years worked on problems of the heat transfer and materials which have a bearing on the nuclear propulsion problem. We now have the facility authorized by the Congress which will permit the simulation of the radiation conditions.

We are not building a nuclear propulsion plant. We are building a reactor as a source of radiation so that we can work on materials, not only under realistic conditions of temperature and pressure, but also of radiation.

The CHAIRMAN. Are you doing intensive research in the intercontinental ballistic missile?

Dr. DRYDEN. We are doing the basic and fundamental research to give the design information on which these missiles can be designed, particularly on the very difficult problem of getting something back into the atmosphere without burning it up.

The CHAIRMAN. That is a very important field today, is it not?

Dr. DRYDEN. It is a very important field.

The Chairman. Mr. Moss.

Mr. MOSS. At the present time you have ten 313's?

Dr. DRYDEN. Yes, and 28 of the supergrades. Three GS–17's and twenty-five GS–16's. No GS–18's.

Mr. MOSS. You would not propose to take any of those supergrades and convert them to 313's?

Dr. DRYDEN. There are 27 of the 28 who are eligible. Here again I would like to make clear, having listened to the other testimony, that we are operating a research business. There are administrators, research people administering research, and other administrative people who do procurement, personnel, and other work, which does not require specialized technical knowledge of aeronautical science.

Now, I would not like to see a research administrator ruled out of a GS–16 or 17 or 18.

So that I think the only statement I could make at this time is that there are 27 who would be qualified for either. That is, they are administering research as well as qualified to do research.

Mr. MOSS. But they are primarily administering?

Dr. DRYDEN. If I took you around to 1 of our jobs and you saw what 1 of these people do, you will see that it is 1 of these crossed fields. They are primarily making technical decisions, what project shall we do next? What are the scientific reasons for doing this? In the course of this work they have some control over the assignment of people. They have to make certain kinds of reports and do a certain amount of general administration.

I would call them research administrators.

Mr. MOSS. The snowballing of this has been discussed. If the possibility should develop, you would have to then request positions beyond the 50 additional you are asking for today?

Dr. DRYDEN. We might not suggest that solution.

Mr. MOSS. Do you think perhaps it might be better to have a separate classification of professional and scientific positions?

Dr. DRYDEN. All I can say is that we are discussing our problems with the Bureau of the Budget and the Civil Service Commission. They are sympathetic and see what the problem is.

The only thing we are prepared to bring before you specifically is this bill at the present time.

Mr. MOSS. You regard it as a cure or as an expedient?

Dr. DRYDEN. We regard it as an emergency expedient to see it we can reverse this trend of the top people leaving.

Mr. MOSS. Is it going to be any material aid in recruting?

Dr. DRYDEN. No, sir; except indirectly. There is a greater job to aspire to 20 years from now, but this does not deal directly with a recruiting problem which we also have under consideration before the Commission.

Mr. MOSS. You regard that as a serious problem?

Dr. DRYDEN. It is a serious problem. We got relief some time ago. The Commission authorized recruiting above the bottom step of the grade. That made quite an impact. We got more people for a short time.

Then industry moved up so that all that has been taken up, and more.

Mr. GUBSER. As I mentioned, I do not know whether you were here yesterday, or not, Dr. Dryden, but is it not true in at least one of your installations that all of your scientists who are recruited in the GS–5 and 7 level have come from the lower half of the graduating classes?

Dr. DRYDEN. I think that is essentially correct for all installations.

Mr. LACKLEN. Not the lower portion, but we didn't get the top 10 percent.

Mr. GUBSER. Even with the relief you got from the Civil Service Commission you still are not getting the top graduates.

Mr. LACKLEN. No.

Mr. Moss. Doctor, if you are going to continue to be out in front in basic research, you are going to have to recruit at least some of your people from the top group of graduates, are you not?

Dr. DRYDEN. That has been the strength of the NACA, in the past. Our philosophy has always been to bring in numbers of people at the lowest grade, keep the bright ones and move them on up through the organization.

We have done very little building from outside in the higher grades because you don't find the proper experience so much outside. We do a unique kind of job. We essentially train people on the job.

Certainly in 1940 there were no schools of rocket technology, no special fuels, and all the rest of the subjects that we deal with.

Mr. Moss. Is it not sometimes easier to hold a man after he has had years in service?

Dr. DRYDEN. In fact, if we can get him on the job we usually have little difficulty holding him.

Now, the Civil Service structure is so set up that you have this big gap in recruiting salaries between the Government and industry. But again, I must say that the Civil Service Commission has been very helpful.

Within a period of, say, 3 years, you can get a man at a salary level not too far below industry, certainly close enough so that he considers staying.

As a matter of fact, training with us is a very important element in increasing a man's value to industry. We expect a certain number to leave and go to industry.

So for about 8 or 10 years he can make reasonable progress even for a bright chap. Then he comes up against the fact that there is a ceiling and the numbers are declining very rapidly at the top.

Some of our people who have left have not been so much concerned about this 50 percent immediate increase in salary, but are saying, "What happens if I stay with the NACA? Where do I go?"

This is a problem you are dealing with in other legislation.

Mr. Moss. I do not know that we will have other legislation. We hope we will.

Dr. DRYDEN. Well, proposed legislation.

Mr. Moss. Mr. Chairman, I wonder if we might possibly request from the Civil Service Commission the number of supergrades presently utilized for scientific or technical positions in research and development.

The CHAIRMAN. Yes. Commissioner Moore is here.

Commissioner MOORE. We don't have that this morning.

Mr. Moss. You could compile that information?
Commissioner Moore. Yes.
(The information follows:)

RESEARCH AND DEVELOPMENT POSITIONS IN GRADES 16, 17, AND 18 OF THE GENERAL SCHEDULE OF THE CLASSIFICATION ACT OF 1949, AS AMENDED FEBRUARY 23, 1956

DEPARTMENT OF AGRICULTURE

GS–18—Administrator, Agricultural Research Service
GS–17—Deputy chief, Soil Conservation Service
GS–17—Deputy administrator (research), Agricultural Research Service
GS–17—Assistant chief (forest resource), Forest Service
GS–16—Assistant administrator (experiment stations), Agricultural Research Service
GS–16—Director, crops research, Agricultural Research Service
GS–16—Director, utilization research, Agricultural Research Service
GS–16—Director, livestock research, Agricultural Research Service
GS–16—Director, human nutrition and home economics research, Agricultural Research Service
GS–16—Assistant chief (research), Forest Service
GS–16—Director, farm and land management research, Agricultural Research Service
GS–16—Deputy administrator (State experiment station programs), Agricultural Research Service
Total: GS–18, 1; GS–17, 3; GS–16, 8; total 12.

DEPARTMENT OF COMMERCE

GS–18—Director, National Bureau of Standards
GS–18—Chief, Weather Bureau
GS–17—Deputy chief, Weather Bureau
GS–17—Associate director for chemistry, National Bureau of Standards
GS–16—Assistant chief (operations), Weather Bureau
GS–16—Director of meteorological research, Weather Bureau
GS–16—Director of physical research, Weather Bureau
GS–16—Deputy commissioner (engineering), Public Roads
GS–16—Director, office of technical services, Business and Defense Services Administration
GS–16—Deputy commissioner (research), Public Roads
GS–16—Director of Boulder laboratories, National Bureau of Standards
GS–16—Director of technical development, Weather Bureau
Total: GS–18, 2; GS–17, 2; GS–16, 8; total 12.

DEPARTMENT OF DEFENSE

Office of the Secretary
GS–18—Scientific advisor, SHAPE
GS–18—Director of aircraft and marine craft, OAS (applications engineering)
GS–17—Director of guided missiles, OAS (applications engineering)
GS–17—Director of resources division, Research and Development Board
GS–17—Assistant research director, weapons systems evaluation group, OAS (research and development)
GS–17—Director of electronics, OAS (applications engineering)
GS–16—Assistant director, planning division, Research and Development Board
GS–16—Executive director, committee on guided missiles, Research and Development Board
Total: GS–18, 2; GS–17, 4; GS–16, 2; total 18.

DEPARTMENT OF THE AIR FORCE

GS–18—Deputy for programs, OAS (research and development)
GS–17—Chief scientist, SAC, Offutt Air Force Base
GS–17—Technical director, Air Force Flight Test Center, Muroc Lake, Calif.
GS–17—Technical director, laboratories, Wright Air Development Center
GS–17—Director, electronics research, ARDC
GS–17—Medical research adviser, Office of Surgeon General
GS–17—Technical director to deputy commander, research and development

GS–16—Chief, research branch (atomic energy), DCS/Operations
GS–16—Director, geophysical research, AMC
GS–16—Chief, atomic warfare division, DCS/Operations
GS–16—Technical director (aircraft weapon systems), ARDC, Wright Air Development Center
GS–16—Technical director, armament laboratory, ARDC, Wright Air Development Center
GS–16—Aeronautical research, development and design engineer, Directorate of Flight Research
GS–16—Deputy chief scientist, SAC
GS–16—Assistant for air weapons evaluations, DCS/Development
GS–16—Technical director, nuclear systems application, Wright Air Force Base
GS–16—Weapon systems technical director, ARDC
GS–16—Chief scientist, office of commander, ARDC
GS–16—Scientific adviser to technical director, AFOAT
GS–16—Scientific adviser to commander, Holloman Air Development Center
GS–16—Technical director, DCS/Operations, ARDC
GS–16—Director of scientific services, Air Weather Service, MATS
Total: GS–18, 1; GS–17, 6; GS–16, 15; total 22.

DEPARTMENT OF THE ARMY

GS–18—Scientific and technical consultant, ABMA
GS–18—Chief, research analysis laboratory, ABMA
GS–18—Deputy director, development operations, ABMA
GS–17—Deputy director of research and development
GS–17—Scientific director, QMC, Research and Development Command
GS–17—Technical director of research and development board, Office of Surgeon General
GS–17—Special assistant to the director of research and development programs, Office of the Secretary
GS–17—Deputy chief, chemical and radiological laboratories, Research and Engineering Command, Army Chemical Center
GS–17—Technical director of research (pathology and basic sciences), Armed Forces Institute of Pathology
GS–17—Civilian chief, medical laboratories, Army Chemical Center
GS–17—Chief, development division, Redstone Arsenal
GS–17—Scientific advisor to Chief of Research and Development
GS–17—Technical director, development operations division, ABMA
GS–17—Deputy chief, research analysis laboratory, ABMA
GS–17—Director, guidance and control laboratory, ABMA
GS–17—Director, structure and mechanics laboratories, ABMA
GS–17—Director, launching and handling equipment laboratories, ABMA
GS–17—Director, missile firing laboratory, ABMA
GS–17—Deputy director, industrial operations division, ABMA
GS–16—Technical director, explosives laboratory, Picatinny Arsenal
GS–16—Associate technical director of mechanical design and development, Picatinny Arsenal
GS–16—Technical director of metallurgical laboratory, Watertown Arsenal
GS–16—Director, research and development, Frankford Arsenal
GS–16—Director of engineering, Signal Corps
GS–16—Assistant chief, Engineering Research and Development Division
GS–16—Executive director, Transportation Research and Development Command
GS–16—Technical director, Engineering Research and Development Laboratories
GS–16—Deputy director, support operations division, ABMA
GS–16—Chief, production engineering branch, ABMA
GS–16—Director, computation laboratory, ABMA
GS–16—Director, aeroballistics laboratory, ABMA
GS–16—Deputy director, missile firing laboratory, ABMA
GS–16—Deputy director, launching and handling equipment laboratories, ABMA
GS–16—Deputy director, guidance and control laboratories, ABMA
GS–16—Assistant to Chief, research analysis laboratory, ABMA
GS–16—Deputy director, structure and mechanics laboratory, ABMA
Total: GS–18, 3; GS–17, 16; GS–16, 17; total 36.

DEPARTMENT OF THE NAVY

GS–18—Science director, research group, ONR
GS–17—Associate technical director, Naval Ordnance Test Station, Inyokern, Calif.
GS–17—Chief engineer, research and development division, Bureau of Ordnance
GS–17—Chief scientist, nuclear power, Bureau of Ships
GS–17—Superintending scientist, Mine Countermeasures Station
GS–17—Associate technical director (research), NOL
GS–17—Project scientist, special missile weapon system, Bureau of Ordnance
GS–17—Chief consultant, underwater sound laboratory, Bureau of Ships
GS–16—Associate director of research, NRL
GS–16—Assistant head, armor, bomb, projectile and ballistics branch, research and development, Bureau of Ordnance
GS–16—Associate director of research, NRL
GS–16—Associate Director of Research, NRL
GS–16—Technical Director, Electronics Design, Design and Development Division, Bureau of Ships
GS–16—Deputy Science Director, ONR
GS–16—Technical Assistant to Project Director, Special Weapon System Office, Bureau of Ordnance
GS–16—Physical Science Administrator, Radiological Defense Laboratory
GS–16—Director of Research, Underwater Sound Laboratory
GS–16—Naval Architect, Hydromechanics Laboratory, David Taylor Model Basin
GS–16—Director of Research, Naval Proving Ground
GS–16—Head, Evaluation and Analysis Group, Research and Development Division, Bureau of Ordnance
GS–16—Chief Engineer for Electronics, Research and Development Division, Bureau of Ordnance
GS–16—Technical Adviser for Aircraft Development, Bureau of Aeronautics
GS–16—Director, Airborne Equipment Division, Bureau of Aeronautics
GS–16—Director, Research Division, Bureau of Aeronautics
GS–16—Deputy Science Director (Research Coordination), ONR
GS–16—Director of Operations Research, ONR
GS–16—Head, Reactor Engineering Branch, Nuclear Power Division, Bureau of Ships
GS–16—Project Engineer, Submarine Fleet Reactor Project, Nuclear Power Division, Bureau of Ships
GS–16—Technical Assistant to Director, Power Plant Division, Bureau of Aeronautics
GS–16—Scientific Advisor to Test Director, Air Missile Test Center
GS–16—Special Research Liaison Officer, Bureau of Aeronautics
GS–16—Technical Director, United States Hydrographic Office

Total: GS–18, 1; GS–17, 7; GS–16, 24; total 32.
Total, Department of Defense: GS–18, 7; GS–17, 33; GS–16, 58; total 98.

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

GS–16—Chemist, National Heart Institute, PHS
GS–16—Chief, Biochemistry Section, National Cancer Institute, PHS
GS–16—Chief, Biophysics Laboratory, National Institute of Neurological diseases and Blindness, PHS

Total: GS–16, 3.

DEPARTMENT OF THE INTERIOR

GS–18—Director, Geological Survey
GS–18—Director, Bureau of Mines
GS–17—Deputy Director, Bureau of Mines
GS–17—Associate Director, Geological Survey
GS–16—Assistant Director, Geological Survey

Total: GS–18, 2; GS–17, 2; GS–17, 1; total 5.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

GS–17—Associate Director, Langley Aeronautical Laboratory
GS–17—Associate Director, Ames Aeronautical Laboratory
GS–17—Associate Director, Lewis Flight Propulsion Laboratory
GS–16—Assistant Director, Ames Aeronautical Laboratory

GS–16—Assistant Director, Ames Aeronautical Laboratory
GS–16—Assistant Director, Langley Aeronautical Laboratory
GS–16—Assistant Director, Langley Aeronautical Laboratory
GS–16—Assistant Director, Lewis Flight Propulsion Laboratory
GS–16—Chief, High-Speed Research Division, Ames Aeronautical Laboratory
GS–16—Chief, High-Speed Flight Station, Langley Aeronautical Laboratory
GS–16—Chief, Materials and Thermodynamics Research Division, Lewis Flight Propulsion Laboratory
GS–16—Chief, Compressibility Research Division, Langley Aeronautical Laboratory
GS–16—Chief, Full-Scale and Flight Research Division, Ames Laboratory
GS–16—Chief, Supersonic Propulsion Division, Lewis Laboratory
GS–16—Chief, Dynamic Loads Division, Langley Laboratory
GS–16—Chief, Fuels and Combustion Research Division, Lewis Laboratory
GS–16—Chief, Full-Scale Research Division, Langley Laboratory
GS–16—Chief, Engine Research Division, Lewis Laboratory
GS–16—Chief, Structures Research Division, Langley Laboratory
GS–16—Chief, Physics Division, Lewis Laboratory
GS–16—Chief, Flight Research Division, Langley Laboratory
GS–16—Aerodynamic Research Scientist, Langley Laboratory
GS–16—Chief, Theoretical Mechanics Division, Langley Laboratory
GS–16—Chief, Aerodynamics Division
GS–16—Technical Assistant to Associate Director, Langley Laboratory
GS–16—Chief, Aircraft Loads and Structures Division
GS–16—Assistant Director, Lewis Laboratory
GS–16—Chief of Technical Services, Langley Laboratory
GS–16—Chief, Stability Research Division, Langley, Laboratory
Total: GS–17, 3; GS–16, 26; total 29.

NATIONAL SECURITY AGENCY

Position descriptions are classified information
Total: GS–18, 2; GS–17, 2; GS–16, 19; total, 23.

OFFICE OF DEFENSE MOBILIZATION

GS–17—Special Assistant for Scientific Liaison
Total: GS–17, 1.

SMITHSONIAN INSTITUTION

GS–17—Director, National Msueum
GS–17—Director, Astrophysical Observatory
Total: GS–17, 2.
Grand total: GS–18, 14; GS–17, 48; GS–16, 123; total, 185.

Mr. Moss. In setting up the standards for these positions, what real coordination is there between agencies, between your agency, the Departments of the Army, Navy, or the Air Force?

I understand that there is a preaudit by the Civil Service Commission. Is that on the basis of standards? How do you break down the salary levels in these 313's? Do you have definite levels?

Dr. DRYDEN. The agency recommends and the Civil Service Commission approves or disapproves.

Mr. MACY. It is usually based on the previous level of scientific work on the part of the incumbent. This is primarily a judgment with respect to the incumbent's respective contribution to the research and development.

Mr. Moss. How closely coordinated is that?

Mr. MACY. We endeavor to maintain equity across agencies on jobs in shops of that kind.

Mr. Moss. I think that is all the questions I have.

The CHAIRMAN. Mrs. St. George.

Mrs. ST. GEORGE. No.

Mr. CEDERBERG. You have two supersonic wind tunnels and so forth. Now, how many does the Navy have, how many does the Army have, and how many does the Air Force have? What are the variations in missions between the two?

Dr. DRYDEN. This has been the subject of at least two Congressional hearings and developed at great length.

I suppose you don't want to take a long time to develop it.

Mr. CEDARBERG. No, very briefly.

Dr. DRYDEN. So far as duplication between the NACA and the military, here on this chart, are a list of technical fields of aeronautic research and development that the Department of Defense is concerned with.

We are involved in three of those areas. In other words, we have nothing to do with armament, nothing to do with flight instructions, crew training, navigation, electronics, photography, medicine and biology.

Our field is in aerodynamics, powerplant, aircraft structures. The NACA has had equipment of greater technical capability than the other agencies, large wind tunnels of high speed and high altitude engine test facilities.

I don't want to get technical. These facilities give results which you can bank on a little more safely in spending millions of dollars on a prototype.

In most cases the other agencies have had smaller equipment more suitable for exploratory operations, but actually used not for research, but for trouble shooting on specific designs, and for evaluation of proposals which come before them.

Of course, about six years ago the Congress authorized the so-called unitary wind tunnel plan which was very well coordinated. NACA built 3 large wind tunnels at cost of $75 million and the Tullahoma station of the Air Force was built with 3 other specialized facilities. The Tullahoma facility is for evaluation of full size engines as installed in parts of airplanes.

As to the coordination between the work of NACA and the Department of Defense, first, NACA deals with only three of the areas shown on the chart and with a different time scale.

The Defense Department wind tunnel man is interested in inlets, for example, because an experimental airplane is having trouble with an inlet and measurements are made in his wind tunnel to try to find out the answer.

When you have serious trouble with a military airplane, when you have to ground airplanes, when the production line is stopped, everybody in the country who can contribute is called in to work on that problem.

For example, when the F–100 had a little problem, when it was temporarily grounded, three airplanes were permitted to fly. One we flew, one North American flew, and one the military flew, and all of us worked at top speed to see what could be done to get the production line moving again.

Generally speaking, the military services are concerned more directly with the practical problems of present airplanes. We are concerned with the problems of the next airplanes to be built.

Now the coordination is further accomplished through our technical subcommittees.

This chart comes from a presentation before one of the Senate committees. It indicates the representation from the military on our various committees and subcommittees.

There are people from the office of the Secretary of Defense, from the Air Force, from the Navy, and from the Army. If you look at the committee on seaplanes you see five men in blue suits, the Navy has primary interest in seaplanes.

If you look at the committee on helicopters, you have 2 Army, 2 Navy, and 2 Air Force.

So it goes.

And these are the people in the services who are concerned with these particular fields.

Take the powerplant committee. The men on this committee are the ones responsible for powerplant programs in the Navy and in the Air Force.

Mr. GROSS. At that point, Doctor, if I may, I wonder if you would care to say who had the primary responsibility for the development of those planes down at St. Louis that would not fly?

Dr. DRYDEN. That was a Navy contract, as I understand it, sir. I think the Navy can give you the background on what happened there.

I can tell you briefly what happened. An advanced engine concept did not work out in time. This is a simple statement of it.

An effort was made to make a big jump and this did not succeed. This happens sometimes in this business.

Mr. CEDERBERG. Do I understand correctly that the basic information that your agency provides is, then, given to the military and they develop it further in their own testing facilities?

Dr. DRYDEN. No. They develop airplanes and missiles. We don't design or develop any airplanes or missiles. We furnish the basic design information. They want an airplane which goes to certain altitude, carries so much load, has this kind of equipment. The designer has to meet all the requirements at once.

We have somewhat an easier job. We don't have to solve all the problems at once. We just have to give him the numbers for one part of it.

Mr. CEDERBERG. Then you are convinced that there is no duplication of effort between what you are doing and what the military is doing?

Dr. DRYDEN. My testimony was that I know of no duplication of a major program.

We do occasionally find smaller elements and we correct them as we find them.

Take one as an example. There is a problem of dropping a bomb from an airplane at supersonic speed. It is a difficult problem. We were asked by certain groups in the military to work on this problem. We set up a program, and reported it in our committees.

However, back home there is a man at another desk whose responsibility is bombs.

Who has the responsibility for seeing that the bombs get out of the bomb bay successfully?

Is it the airplane man or the bomb man? There was a little lack of communication. So the bomb man started a contract with an outside contractor to work on this problem.

The duplication was discovered when the contractor came to our laboratory to find out what help we could give him. He said right away, "Well, it is foolish for me to go ahead with this program because you are already doing it"—things of that kind do happen.

There are some cases of purposeful duplication. I have had all three labs working on the aerodynamic heating problem and will continue to do so until it is licked.

But I do not know of any duplication of a major program, without a good reason. And this is the mechanism by which the knowledge gets around, word of mouth.

Another factor in preventing unnecessary duplication is that not only do military men serve on our subcommittees, but our people are interlocked over there. I am a member of the President's Scientific Advisory Committee, a member of the Interdepartmental Committee on Scientific Research and Development.

The Assistant Secretary of Defense for Research and Development, of course, is a member of NACA. There are several of us who are on the technical advisory panel on aeronautics advising the Assistant Secretary.

We have some people on their advisory panel on fuels and lubricants.

I have been on the Army Advisory Committee to the Ballistic Research Laboratory.

Another man advises Picatinny Arsenal.

The Chairman of the NACA is a member of the Naval Research Advisory Committee, the one that advises the Chief of Naval Operations, and there are NACA people involved in the Office of Naval Research activities.

Then four of us, including myself, are members of the Scientific Advisory Board of the Chief of Staff of the United States Air Force. This is the way we get information, if you like, about everything that is going on and bring to bear information that we have.

Now, in addition to this, there are staff relations. For example, Office of Naval Research exchanges with us reports of their contracts so we know for what they are contracting. It is a highly informal mechanism, in some respects, but very effective. Nobody is the czar or boss or can be under the present organization of the Government.

In other words, if we decide to do something which we know somebody else is doing, we do it knowingly and not unknowingly.

And there is no one, for example, who could tell us other than the NACA Executive Committee that we must not do this research if we think it is necessary.

Mr. LESINSKI. In other words, you are, let us say, like a clearinghouse for the military, seeing that they do not duplicate work that is being done; they take what you have and develop it further for their particular purpose?

Dr. DRYDEN. This is as simple as you can make it. Of course, any simple statement does not cover every eventuality.

Mr. LESINSKI. I know that Canada is developing the so-called disk plane, or whatever you want to call it, today.

Dr. DRYDEN. We have been consulted on that matter. We are not at the moment doing anything directly on that project.

The CHAIRMAN. Mr. Dowdy.

Mr. DOWDY. I have been interested in your relating the activities in which your committee is involved. There would be a lot of ques-

tions I could ask as a matter of curiosity, but I do not believe they would be of any benefit on the particular bill we are considering.

Mr. JOHANSEN. Dr. Dryden, is it not true that by the very nature of scientific activity in this field a certain amount of duplication is vital and helpful on the principle that in the multitude of counsel is wisdom?

Dr. DRYDEN. Yes. That is what I meant to imply by saying that there are certain things on which, for example, I encourage some duplication, if you want to call it that, in all three laboratories, such as the problem of heating of a reentry missile. Until we know more about that than we do now, we will continue to duplicate.

Mr. JOHANSEN. In other words, the criticisms and the restrictions with respect to duplication that you have in some routine operation of Government is totally inapplicable to the problems you are dealing with?

Dr. DRYDEN. I think one story I heard might highlight it. This was actually asked by a man in Government that I won't identify other than to say he was not in Congress. He asked one of my assistants this question on duplication and tried to apply it to the automobile industry.

My assistant said, "Do you consider that the man who puts the rear wheel on the automobile is duplicating the work of the man who is putting the engine in front?"

The reply was, "Yes; they are both making automobiles."

My assistant replied, "Well, I would not like to drive an automobile without a rear wheel."

The point is that considering duplication—that is one limitation of the pie chart I showed you—duplication in aerodynamics, we find hundreds of agencies in this country working in the field of aerodynamics.

Now, I am not trying to quibble. Of course, you can go to the other extreme. Any clever fellow can show you that what he is doing does not exactly duplicate what anybody else is doing, even though it is closely related. Duplication can only be considered in the light of a proper definition of the field, neither too broad or too narrow.

Mr. GROSS. Doctor, did you ever make a study of paying your people on the prevailing wage rate?

Dr. DRYDEN. We have considered that. We have considered it very seriously.

Mr. GROSS. What kind of bind would you be in if you did attempt to pay on the prevailing wage rate?

Dr. DRYDEN. We think it is a solution worth study. We have such matters under discussion, but have not clearance to bring them, in the form of any concrete proposal, to you.

Mr. GUBSER. On this matter of duplication, you deal with industry and with the various services on current problems of production, but are you not unique in your function of amassing and compiling data for the distant future?

Dr. DRYDEN. Yes.

Mr. GUBSER. Far distant or far in advance of anything that is being done currently by the aircraft industries or the services, and from that data which you compile private industry and the services are able to chart the course of the future that they think aviation should take?

Dr. DRYDEN. Yes, sir.

The original language of the law in 1915 was "to study the scientific problems of flight with a view to their practical solution."

Nowadays I think if I were writing it, I would say it is to advance aeronautical knowledge—aeronautical technology.

Mr. GUBSER. In the light of that I suppose it would be more appropriate if I stepped down there with this statement I want to make instead of sitting back here, but there is a lot of talk about the fact that if the United States could develop the intercontinental missile before Russia develops it, that World War III will never be.

It seems to me that this information for the future from which we chart the course of aviation is a very, very basic thing, probably the most basic thing to our existence that I could think of, and that keeping the personnel available to allow us to get that information is one of the most importat things we in this committee, or any other committee, could do.

Now, I am very familiar with one of your installations. It is a sort of hobby of mine. I spend a lot of time there and I know a great many of the people personally. I will say this: I have never in all my life found a group of people dedictated to a cause like they are. It is just remarkable that they have stayed as long as they have. It is a tribute to the esprit de corps of the organization that they have stayed. But I cannot help think: How long can we continue to kick them in the teeth and have them stay here doing this important job for us? Frankly, I think if I were in their boots I would be at the end of my rope right now.

Dr. DRYDEN. I will let you come down and testify.

I would make one remark as a kind of personal philosophy. I don't agree with the people who say you have to wait until all the basic research is done before you order the weapon. Nor do I believe that you should go out and order a weapon when you do not have the faintest idea in the world how to do the job.

There is no question but that we have to take an intermediate course. We start things when we do not know all the answers. This puts great pressure on people like ourselves to come up and get busy and get the answer quickly.

So my own philosophy is that I would not argue that we have to do all the basic research before we venture to do anything but we must take an intermediate course.

The CHAIRMAN. Are there any further questions?

Dr. VICTORY. Mr. Chairman, shortly after your committee adjourned on February 21, Mr. Ismar Baruch died. We knew him very well. Speaking on behalf of the NACA from the point of view of one of the agencies of the Government having its relations and its discussions with the Civil Service Commission, I would like to say a word of tribute to Mr. Baruch. I have known him nearly all my life, and I have always found him to be a square shooter, a very dependable man, a cooperative man, a dedicated public servant; one of the type of men of which the Federal Civil Service Commisison can be proud of.

His loss is a great loss to the Civil Service Commission and to the cause of civil-service progress.

The CHAIRMAN. I fully concur in the tribute that the witness has paid to the late Ismar Baruch. He was of invaluable aid to this committee and his loss will be sorely felt by this committee.

He was one of our principal sources of advice on classification matters. I remember what tremendous aid he rendered to this committee in the preparation of the Classification Act of 1949. He labored day and night for many months assisting this committee in the preparation of that legislation.

He was a great public servant.

Dr. Dryden, I notice you have some exhibits here. Do you wish to incorporate them as part of your testimony?

Dr. DRYDEN. At the pleasure of the committee. We have the same kind of list that you requested of the Defense people, the people with qualifications, the people holding the jobs.

The CHAIRMAN. Unless you desire, they will not be put in the hearing.

Dr. DRYDEN. We have no wish to put them into the record.

The CHAIRMAN. I do not see any necessity for it.

Dr. VICTORY. I think it would be in the public interest not to because it is something that only advertises those people to the industry and we would have more trouble holding them.

The CHAIRMAN. This is just for the information of the committee.

Dr. DRYDEN. Yes.

The CHAIRMAN. We have Commissioner Moore of the Civil Service Commission here. I would like to ask him about this legislation. I would like to ask you a question about H. R. 9350 on which the committee held hearings day before yesterday. The last section of that bill provides for an increase to 285 positions in these supergrades, 16, 17, and 18. What is the position of the officials of the Commission on that request?

STATEMENT OF HON. GEORGE M. MOORE, COMMISSIONER, UNITED STATES CIVIL SERVICE COMMISSION, ACCOMPANIED BY JOHN W. MACY, JR., EXECUTIVE SECRETARY

Commissioner MOORE. We endorse the enactment of that legislation, Mr. Chairman.

On February 10 of this year we submitted a proposal to the Speaker and to the Vice President incorporating our views which endorses that section as well as the other sections of the bill. Also, we endorse H. R. 9405 about which you have heard testimony this morning.

Naturally, I would not want to let this opportunity escape without saying that there is no agency in Government more deeply grieved over the passing of our good friend, Ismar Baruch.

The CHAIRMAN. Do you desire to make a statement, Mr. Macy?

Mr. MACY. No; Commissioner Moore has covered the subject adequately. The Commission endorses both of these bills.

The CHAIRMAN. Thank you gentlemen, very much.

If there is no one else to be heard on this legislation, the committee will adjourn until next Thursday, our regular meeting date. We will take up in executive session these two bills, H. R. 9350 and H. R. 9405.

(Thereupon, at 12:05 p. m., the committee recessed to reconvene at 10 a. m., Thursday, March 1, 1956).

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